

**U.S. DEPARTMENT OF ENERGY**

**INDEPENDENT REVIEW PROCEDURE**

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**DRAFT**





**OFFICE OF ENGINEERING AND CONSTRUCTION MANAGEMENT  
OFFICE OF PROJECT MANAGEMENT SUPPORT  
INDEPENDENT REVIEW PROCEDURE**

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INDEPENDENT REVIEW PROCEDURE**

*"Independent project reviews are essential tools for assessing the quality of project management and transferring lessons learned from project to project." <sup>1</sup>*

## **1.0 INTRODUCTION**

### **1.1 Purpose of Procedure**

This Independent Review Procedure was developed for the purpose of providing guidance to individuals and teams that will be conducting independent reviews of projects and facilities in the Department of Energy (DOE) and the National Nuclear Security Administration complex. This Procedure is intended to provide Program Offices, Operations and Site Offices, and site contractors as well as independent review teams with an understanding of the review process, requirements, and expectations. This Procedure will be modified periodically as guidance for independent reviews evolves.

### **1.2 Background**

The DOE established the Office of Engineering and Construction Management (OECM), within the Office of the Chief Financial Officer (CFO). The OECM was established to strengthen the Department's capabilities in the areas of construction management and project management oversight. The OECM has been designated the lead office in establishing guidelines to ensure final performance baselines are developed for each new project, ensure that independent reviews are undertaken to validate project baselines, and to develop procedures which make the availability of project funding contingent upon successful review and approval by OECM.

The project review process was designed to examine the progress of a capital asset project from planning through the project execution phase. This Procedure defines the criteria necessary to conduct independent reviews, and details the supporting administrative process controlling all independent review activities.

### **1.3 Requirements for Independent Reviews**

#### Congressional Requirements

Pursuant to the FY 2001 Energy and Water Development House and Senate Appropriations Reports, an External Independent Review (EIR) shall be conducted for all new line item capital projects, prior to construction, and after establishing the final performance baseline. The House and Senate Reports also stipulate that an EIR shall include an independent cost estimate and corrective action plan and updates.

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<sup>1</sup>Improving Project Management in the Department of Energy, National Research Council, National Academy Press, P.53, 1999.



### Department of Energy Requirements

Pursuant to DOE Order 413.3<sup>2</sup> the Program Secretarial Officer (PSO) is responsible for performing a Mission Validation Independent Review (IPR) on all Major System (MS) Projects prior to CD-0. An IPR may be conducted to assist in the CD-0 on Other Projects over \$5M. As agent for the Department, OECM shall perform a Performance Baseline EIR on all projects over \$5M prior to CD-2, Approve Performance Baseline, and an Execution Readiness EIR on all MS Projects (i.e., projects with a TPC over \$400M or greater, or any other project so designated by the Office of the Secretary) prior to CD-3, Approve Start of Construction. An IPR must be performed by the appropriate Acquisition Executive (AE) for Other Projects over \$5M (i.e., any project with a TPC less than \$400M and not designated as an MS Project) prior to CD-3, Approve Start of Construction.

### Office of Engineering and Construction Management Requirements

Pursuant to DOE Order 413.3 and the OECM Project Management Practices (draft), a Mission Validation IPR shall be performed prior to CD-0, Approve Mission Need; a Performance Baseline EIR, including and ICE, shall be performed prior to CD-2, Approve Performance Baseline; and an Execution EIR or IPR shall be performed prior to CD-3, Approve Start of Construction.

**Note:** The requirements for Independent Reviews are summarized in Section 2.4.1, Table 2.4.1, Timing for Independent Reviews.

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<sup>2</sup> DOE Order 413.3, "Program and Project Management for the Acquisition of Capital Assets", October 13, 2000



## **2.0 OVERVIEW OF INDEPENDENT REVIEWS**

### **2.1 Purpose**

The purpose of conducting a project review is to validate that the project will satisfy mission requirements. Reviews provide pertinent information for management to make necessary decisions, and demonstrate and confirm a project's accomplishments at various stages. Reviews also provide the project with recommendations for improvement. For example, review reports provide valuable information that is useful to the Energy Systems Acquisition Advisory Board (ESAAB) or ESAAB equivalent, decision-making process.

### **2.2 Objectives**

The objectives of conducting project reviews are to:

1. Ensure readiness to proceed to a subsequent project phase;
2. Ensure orderly and mutually supportive progress of various project efforts;
3. Confirm: (1) functional integration of project products, and  
(2) efforts of organizational components;
4. Enable identification and resolution of issues at the earliest time, lowest level, and lowest cost;
5. Support event-based decisions; and
6. Control risk.

### **2.3 Independent Reviews Defined**

Credible and independent reviews of each project are an expectation of Congress, OMB, local stakeholders, Tribal Nations, and DOE. Headquarters Program Offices, Operations/Field Offices and the Federal Project Manager (FPM) will conduct periodic onsite reviews and assessments of project status throughout project development and execution, as well as, review and analyze project reporting as a normal function of oversight. Independent Reviews will be conducted to assure continuing progress, appropriate planning and development, effective use of funds, mission need, etc. An independent review is conducted by a non-proponent of the project. It may be a science-based or engineering-oriented peer review, a review of the project management structure and interrelationships between key organizational components, a review targeted to a specific issue such as cost or budget, a review covering safety, or a combination thereof. Rigorous independent reviews should reduce the need to perform additional resource-consuming audits and reviews by other organizations.

#### **2.3.1 External Independent Reviews**

An EIR is conducted by reviewers outside the Department. OECM will select an appropriate contracting agency to contract for such reviews, excluding the M&O/M&I contractors. The actual selection of reviewers, contract management and contact with the contracting officer, and dialogue with the EIR contractor on matters pertaining to the contract are the sole purview of OECM.

All EIRs are managed by OECM and documented in the data repository. The following components are planned and coordinated with the appropriate line manager:

- ? Specific review scope, criteria, and objectives
- ? Organizations/personnel to be involved in the review
- ? Specific areas of perceived and/or actual risk, as well as areas of potential concern

The PSO's project management support office provides coordination for the EIR contractor on site, resolves issues of schedule and access while on site, gathers and provides requested and proffered information to the



reviewer, and respond to the reviewer on errors of fact or needed clarification. The project management support office does not provide direction to the reviewer as to the content of the reviewer's report.

Line management, including the Deputy Secretary, PSO, or a program or project organization within the PSO may request an EIR. EIRs also may be initiated in response to an external requirement. However, reviews, studies, or investigations conducted by the General Accounting Office or the Office of the Inspector General are not considered EIRs for DOE purposes. On an exception basis, OECM may waive the requirement for an EIR, if in its determination a recently completed IPR is sufficient and an EIR would not be justified.

A tailored approach should be applied in determining the quality and level of detail to be reviewed. Simpler areas that offer low risk of project impact should receive less scrutiny than high-risk areas such as potential costly areas, or areas on which problems seem to be developing. EIRs are used to determine if complex issues exist, and for assistance in the resolution of such issues. If a design is new, untried, and unproven, and no standards against which judgments regarding viability can be made, a review by appropriately trained and knowledgeable experts is in order. EIRs include reviews of the contractor's project control system, organizational structure, and management processes.

EIRs shall be conducted and reported using the standard format, as appropriate (see Section 3.0). A Corrective Action Plan (CAP) is required to be developed and completed following the review by the FPM. The Review Team will provide a CAP shell, containing only the recommendations noted in the report. A CAP is a living document until all issues are closed.

### **2.3.2 Independent Project Reviews**

An IPR is conducted by reviewers within the department. The Deputy Secretary or Secretarial Acquisition Executive (SAE), or the designated Acquisition Executive (AE), or the PSO and the operations/field office manager and program managers, may authorize or conduct IPRs as required. The PSO or operations/field office manager, as part of the project management oversight process, may request IPRs through the PSO's project management support office for any project, including MS projects. Irrespective of the organizational level initiating an IPR, the Program Management Support Office notifies OECM of its intent to conduct such a review, and OECM is included as an invited observer for all planned reviews. The OECM coordinates the extent of participation on a case-by-case basis with the appropriate organization. Members of an IPR team are not drawn from the responsible program office within a program secretarial organization, related contractors from the project office, or a related program. Reviews may use laboratory, contractor, university, or other expertise from organizations not directly funded by or related to the program/project office being reviewed.

OECM has designated the PSO's Project Management Support Office to be the Departmental lead for IPRs. All IPRs will be directed by the Project Management Support Office in coordination with OECM.

IPRs shall be conducted and reported using the standard format, as appropriate (see Section 3.0). A CAP is required to be developed and completed following the review by the FPM. The Review Team will provide a CAP shell, containing only the recommendations noted in the report. A CAP is a living document until all issues are closed.

### **2.3.3 Independent Cost Estimates**

An Independent Cost Estimate (ICEs) is conducted by reviewers outside the Department. OECM will select an appropriate contracting agency to contract for such reviews, excluding the M&O/M&I contractors. The actual selection of reviewers, contract management and contact with the contracting officer, and dialogue with the ICE contractor on matters pertaining to the contract are the sole purview of OECM.

All ICEs are managed by OECM and documented in the data repository.



Line management, including the Deputy Secretary, PSO, or a program or project organization within the PSO may request an ICE. ICEs also may be initiated in response to an external requirement. On an exception basis, OECM may waive the requirement for an ICE, if in its determination a recently completed ICE is sufficient and an ICE would not be justified.

A tailored approach should be applied in determining the quality and level of cost and schedule detail to be reviewed. Less costly projects that have low risk of project impact should receive less scrutiny than high-risk or high cost items, or areas on which problems seem to be developing. Independent Cost Estimates (ICEs) are used primarily to verify project cost and schedule estimates and support the CD-2 process in establishing project performance baselines. ICEs are part of the Performance Baseline EIR, and can be combined with any EIR for efficiency. ICEs may be requested at other times and for other reasons. OECM functions as DOE's agent, working through appropriate contracting officers to establish contracts for ICEs. ICEs are documented in formal reports submitted to the SAE/AE by OECM. Each ICE is reconciled with the current program office estimate by the FPM.

ICEs shall be conducted and reported using the standard format, as appropriate (see Section 3.0). Reviews may utilize or be augmented by Construction Industry Institute's Project Definition Rating Index (PDRI) process or a derivation thereof as approved by OECM. A separate and complete report will be prepared and submitted for each ICE, even if an ICE is conducted at the same time as an EIR or by the same Team conducting an EIR. A CAP is required to be developed and completed following the ICE by the FPM. A CAP is a living document until all issues are closed.

#### **2.3.4 Independent Cost Reviews**

Independent Cost Reviews (ICRs) are used primarily to verify project cost and schedule estimates. An ICR may address the same scope as an ICE, however, as it is not executed by OECM it cannot be referred to as an ICE. ICRs may be combined with any IPR for efficiency. ICRs may be requested at other times and for other reasons. The Project Management Support Office functions as DOE's agent, working through appropriate contracting officers to establish ICR teams. ICRs are documented in formal reports submitted to the AE by the Project Management Support Office, usually in support of the ESAAB process. Each ICR is reconciled with the current program office estimate by the FPM.

OECM has designated the PSO's Project Management Support Office to be the Departmental lead for ICRs. All ICRs will be directed by the Project Management Support Office in coordination with OECM.

ICRs shall be conducted and reported using the standard format, as appropriate (see Section 3.0). Reviews may utilize or be augmented by Construction Industry Institute's PDRI process or a derivation thereof as approved by the PSO's Project Management Support Office. A separate and complete report will be prepared and submitted for each ICR, even if an ICR is conducted at the same time as an IPR or by the same Team conducting an IPR. A CAP is required to be developed and completed following the ICR by the FPM. A CAP is a living document until all issues are closed.





## **2.4 Types of and Timing for Independent Reviews**

### **2.4.1 Mandatory Independent Reviews**

The following reviews shall be conducted on all MS projects and may be conducted as noted below on Other Projects over \$5M TPC:

#### Mission Validation IPR (Major System: IPR required/Other Project: IPR optional)

The PSO is responsible for performing a Mission Validation IPR on all Major System (MS) Projects (i.e., projects with a TPC over \$400M or greater, or any other project so designated by the Office of the Secretary). This is a limited review of the project prior to CD-0, Approve Mission Need. It assures the project has clear objectives, strongly linked to mission; identifies major risks; evaluates the acquisition and conceptual plans relative to those risks; and validates the funding request. An IPR may be conducted as appropriate to assist in the CD-0 on Other Projects over \$5M TPC (i.e., any project with a TPC less than \$400M and not designated as an MS Project).

#### Performance Baseline EIR (Major System: EIR/ICE required/Other Project: EIR/ICE optional)

A Performance Baseline EIR, including an ICE, shall be performed on all projects with a TPC over \$5M prior to CD-2, Approve Performance Baseline. It is a detailed review of the entire project that verifies the mission need, validates the proposed technical, cost, and schedule baseline, and assesses the overall status of the project management and control system. This Performance Baseline is subsequently incorporated into the next Congressional Construction Project data Sheet (CPDS) and Office of Management and Budget (OMB) reports as the official baseline for tracking and reporting purposes. The design effort may continue into Final Design concurrent with the EIR and CD-2 processes, however, careful planning should be undertaken to minimize the design risk inherent in proceeding without CD-2. Therefore, only a site office manager can evaluate this risk in light of the cost of design interruption.

The Program Office may request that the Performance Baseline Review be performed earlier than typically scheduled or in conjunction with a joint CD-1/CD-2 review when the performance baseline has been established and the project will benefit from an accelerated schedule, which may be beneficial for a design-build project.

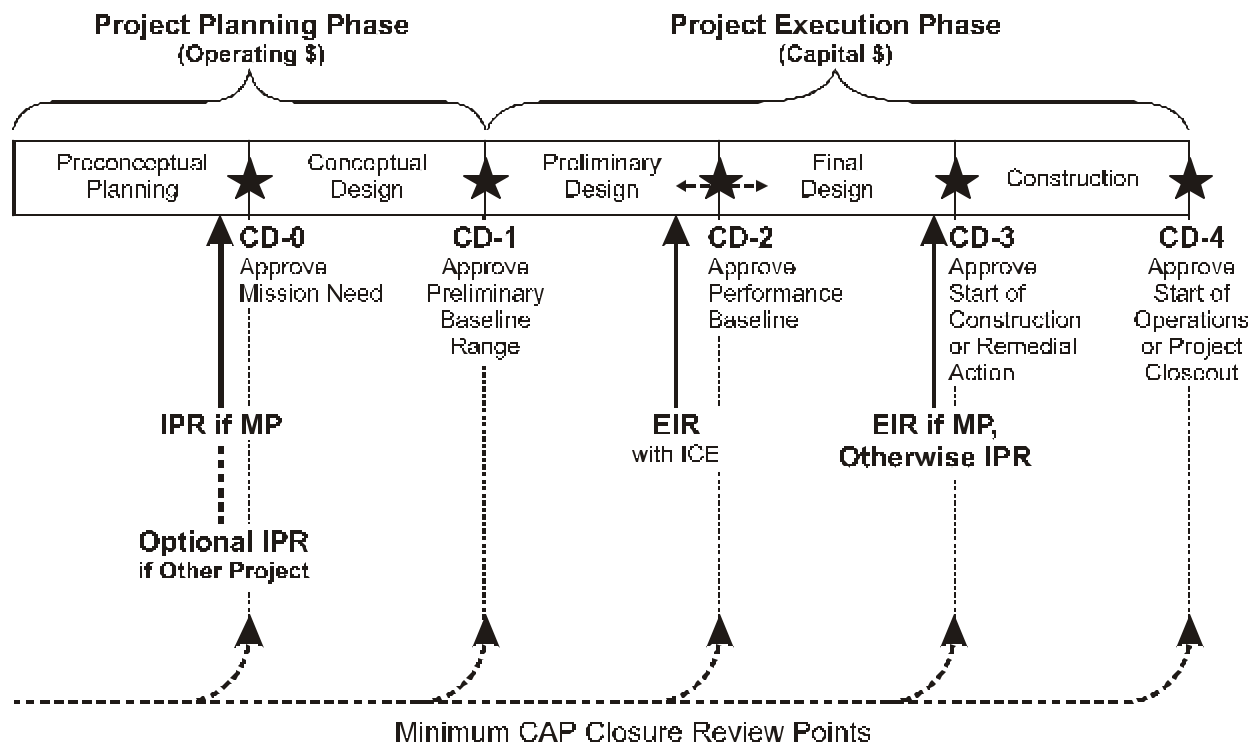
#### Execution Readiness EIR or IPR (Major System: EIR required/Other Project: IPR required)

An Execution Readiness EIR shall be performed on all MS Projects prior to CD-3, Approve Start of Construction. An Execution Readiness IPR must be performed by the PSO's Project Management Support Office for the appropriate Acquisition Executive (AE) for Other Projects over \$5M TPC prior to CD-3, Approve Start of Construction. An Execution Readiness EIR/IPR is a general review of the project that may range from an abridged review of specific areas to a comprehensive review of the entire project. As a minimum, it must verify the readiness of the project to proceed into construction or remedial action, and evaluation of prospective procurement packages. The PSO's Project Management Support Office may elect to delegate IPR responsibility for projects in which the ESAAB authority for CD-3 resides in the Field, if the capability and processes exist for the proper execution of IPRs in the Field.

The results of the EIR/IPR and any corrective actions resulting from the EIR/IPR shall be reviewed by OEMC and shall be presented to the AE and ESAAB equivalent board in conjunction with CD-3. The AE may request an EIR in lieu of an IPR through OEMC.



**Figure 2.4.1**  
**Timing for Independent Project Reviews**



## 2.4.2 Other Reviews

A number of opportunities exist throughout the life of a project in which the review process can be used to implement and enhance project execution. Several examples include, but are not limited to, design reviews, environmental assessments, safety analysis review, and operational readiness review. The use of nonadvocate experts to perform these reviews is an approach that can bring credible industry expertise and resources to bear on the project, which can significantly broaden the review viewpoint. The PSO's Project Management Support Office should facilitate such FPM requests as IPRs or ICRs.

Reviews are held to determine if a product is correct, will perform its intended functions, and meet established requirements. Reviews are also used to determine the current condition of a project. Reviews are an integral part of the project and should be planned in advance and used to complement the line organization's responsibilities.

Other Reviews which are typically conducted such as IPRs or ICEs include:

### Readiness to Proceed Into Preliminary Design Title I (Pre CD-1 Reviews)

The purpose of a Readiness to Proceed Into Preliminary Design (Title I) Review is to examine in depth and deliver a report with the judgment of the Review Team on the readiness of the Project to proceed with Preliminary Design (Title I).

### Procurement Package Review (A-E, Design-Build, or Construction)

A Procurement Package Review is conducted when the Project is ready to proceed with a major procurement of engineering, construction, or design-build services preceding or following approval of CD-1, Approve Preliminary Baseline Range as appropriate.



### Cost Review

Cost Reviews focus on the process used by the Project in preparing the cost estimates. Cost Reviews are generally conducted as a portion of an overall Project Review, however, cost may also be the focus of a Review. The Review Team will determine whether the Project has applied sound and accepted cost estimating processes and whether they are likely to represent the actual cost. The Cost Review will also evaluate the schedule and scope to ensure consistency. Cost Reviews should look at the Critical Decision being considered and the items that must be addressed in that time frame, pursuant to DOE Cost Estimating Guide, DOE G 430.1, Chapter 6, Table 6-1.

### Quarterly Performance Reviews

Quarterly Performance Reviews are conducted on Projects underway. On a standing or select basis the Line Organization may supplement the Quarterly Performance Review(s) with independent participation. Major issues include Environment, Safety and Health (ES&H), technical, construction, state & local, personnel; potential Congressional concerns.

### Annual Validation Review Support

Annual Validation Reviews are conducted on Projects underway (contained in the annual budget call) per CFO direction. On a standing or select basis the Line Organization may desire to supplement the Annual Validation Review(s) with independent participation or request a separate independent review. Major issues include ES&H, technical, construction, state & local, personnel, and potential Congressional concerns.

### Corrective Action Plan Closure Review

The purpose of a Corrective Action Plan (CAP) Closure Review is to ensure that issues raised during prior Reviews have been adequately resolved, including: conditions which do not satisfy applicable Federal regulations, DOE Orders, or agreements with regulatory agencies; actions that must be taken before the Project can have a reasonable expectation of achieving its documented objectives; or Actions that must be taken before the Review Team can make a judgment that the Project is ready to move to the next stage of implementation. This review generally reviews and addresses all previous reviews (EIR, IPR, ICE, ICR)

The CAP Closure Review will be conducted by the Team Lead(s) of as many of the past independent review(s) as possible. This type of review will be conducted at a minimum before each ESAAB decision, or as requested by OECM, the PSO, or the PSO's Project Management Support Office.

### Ad Hoc (For Cause) Reviews

Ad Hoc (For Cause) Reviews may be requested by the Deputy Secretary, Administrator NNSA, SAE, Program Office, or the FPM or PE with the concurrence of the Program Office. The Review objectives and Review Team participants will be developed by the requesting Program Office to meet the specific needs of the requestor.

### Value Engineering Reviews

Value Engineering Reviews are generally conducted as part of an overall Project Review, however, value engineering may also be the focus of a Review. Value Engineering Reviews evaluate the project to identify ways of improving performance, reliability, quality, safety, and life-cycle costs of products, systems, or procedures to achieve "best value".



### **3.0 STANDARD INDEPENDENT REVIEW PROCESS**

#### **3.1 Review Team**

##### Selection of the Review Team Members

OECM (for EIRs and ICEs) or the PSO's Program Management Support Office (for IPRs and ICRs) will select and award contract(s) to a contractor(s) or utilize other resources to conduct and/or staff upcoming reviews. Contract(s) can be for multiple reviews, but the individual team members will be selected on a review-by-review basis.

##### Individual Team Member Qualifications

Each Review should be conducted by a Team comprised of experts in a variety of disciplines such that the Team can adequately review all relevant issues of the Project being reviewed. The Review Team members will be primarily selected from outside the PSO and DOE to ensure the independence (non-advocacy) of the Review. Limited exceptions may occur if DOE or M&O contractor personnel have particular expertise needed for the Review. The PSO's Program Management Support Office may lead and/or participate in IPRs and ICR, if it is not otherwise involved in direct oversight of the project. Only degreed subject matter experts will be utilized as Team Members; the one exception is in the area of cost estimating where substantial direct cost estimating experience may be substituted for the degree requirement. Also, the Team composition should be based upon the type of Review being performed. In addition to a variety of disciplines, the Team should consider experts with in various backgrounds, including other agencies, and private industry.

Generally, OECM, the PSO's Program Management Support Office, and the Program Office should have on-site representatives for each Review to facilitate on-site interaction, assure depth and breadth of Review, ensure appropriate resources are available to the team, and provide feedback. The Review Team may be supported by Advisors, as necessary. Advisors are experts in areas of specialty and complexity who cannot serve as Team Members. Advisors participate in meetings, but do not contribute directly to the report.

Well in advance of the Review, the OECM or the Program Management Support Office (as appropriate to EIRs and IPRs) shall select or approve (based on the contract vehicle) the members of the Review Team based on the subject matter of the Project, and appoint a Review Team Leader. No member of the Team shall have an interest in or a bias toward the Project. The Contractor shall arrange for the Review Report to be prepared and issued to the FPM and the Program Office, and distributed in accordance with Section 3.7.2.

##### Individual Team Member Selection

Each Independent Review must address all of the appropriate subject areas for the specific project. The term "team" is used only for the purpose of grouping all of the individual team members to ensure that all of the subject areas are adequately covered in the Review. The Roles and Responsibilities of the individual team members are listed in Section 3.3.

##### Review Team Leader Selection

The Review Team Leader will be selected by either OECM or the PSO's Program Management Support Office. The Team Leader will be responsible for organizing and managing the review, which includes being responsible for collecting input and developing the Review Plan and the Review Report. The Roles and Responsibilities of the Team Leader are listed in Section 3.3.

#### **3.2 The Review Plan**

During the review planning phase project background information is assembled for the individual team members/ review team. Key project points of contact at DOE headquarters and the field are identified. The proposed scope of the review is mapped out in coordination with the PSO's Program Management Support Office, the cognizant Program Office, and the FPM. After determining the scope of the review, it is possible to identify the



subject matter expertise that should be present on the review committee. OEMC (for EIRs and ICEs) or the PSO's Program Management Support Office (for IPRs and ICRs) will identify and arrange for appropriate personnel (under one or more contract vehicles) to staff each review team, in consultation with the requesting organization.

The Team Lead is responsible for developing the Review Plan in coordination with OEMC, the PSO's Program Management Support Office, the Program Office, and the FPM. The Review Plan: establishes the scope of the review; provides a list of the members of the Review Team; identifies the subject areas assigned to each Team Member; lists the documents to be provided and reviewed prior to the review and the documents that will be provided at the site during the review; establishes a schedule for pre-review, review, and post-review activities; and lists the facilities and equipment that will be needed during the review. OEMC (for EIRs and ICEs) or the PSO's Program Management Support Office (for IPRs and ICRs) will approve the Review Plan.

The Review Plan should be organized as shown below. However, the Team Lead is allowed to amend the following outline on an exception basis to appropriately address each specific review. While the structure of each Review Plan is the same, the content is specifically tailored for each project. The Review Plan helps the Review Team coordinate activities as they execute each review.

#### Outline

The outline for a typical review plan is shown in Table 3.1.1, Review Plan Outline. *Review Overview* identifies the type and defines the scope and purpose of the review to be performed, lists the Program requirements, identifies previous reviews that have been performed, and established the objectives of the review. *Background* provides the description and status of the project, including and project specific problems or issues. *Review Logistics* provides the dates and location of the review, the review schedule (including: preparatory, on-site review, report preparation, and delivery dates), the schedule for pre-review activities, and a list of information that will be available prior to the on-site meetings. *Review Topics and Lines of Inquiry* lists the subject matter to be reviewed and discussed in the review report (see Section 3.5) and the lines of inquiry. The line of Inquiry is a list of issues by review topic that must be discussed and analyzed, as a minimum, during the review. *Team Members and Assignments* will list the team members and the review topic(s) for which each is assigned. *References* list the documentation that will be prepared and made available before or at the review. Other support documentation that will be utilized during the review should be included in this list as well.

**Table 3.1.1  
Review Plan Outline**

1.0	Review Overview
1.1	Type of Review
1.2	Program Requirements
1.3	Previous Reviews
1.4	Objectives of Review
2.0	Background
2.1	Description of Project
2.2	Status of Project
3.0	Review Logistics
3.1	Dates and Location of Review
3.2	Review Schedule
3.3	Pre-Review Teleconferences and Pre-Meetings
3.4	Information Available Prior to On-Site Meetings
4.0	Review Topics and Lines of Inquiry
5.0	Team Members and Assignments



### 3.3 General Roles and Responsibilities

General Review Team Leader and Review Team Member responsibilities are as follows:

1. Review Team Members are expected to conduct a thorough Review of the document(s) and personnel interviews. They should focus their efforts on their areas of responsibility.
2. Review Team Members and the Team Leader should be willing and capable of staying on-site during the entire Review process, and to actively participate in the process described in this Review Plan. This commitment includes development of written input, and participation in Team meetings.
3. Review Team Members will prepare written comments on a timely basis as required by the Review Team schedule.
4. Review Team Members are responsible for ensuring that all comments are unclassified, and for coordinating their comments with an Authorized Derivative Classifier if there is a question.
5. Review Team Leader will organize the Team's work and make assignments so that Team Members' on-site time is well spent and will provide the required products. This will ensure that no single Team Member, including the Team Leader, will be left to complete a disproportionate amount of work.
6. Team members shall prepare and provide written electronic copies of comments to the Review Team Leader on a timely basis to meet the on-site Review schedule. The Review Team Leader will specify the format and schedule for comments.
7. The Review Team Leader is responsible for consolidating all Team comments to ensure consistency and that findings and recommendations can be readily understood. The Review Team Leader will provide copies of the consolidated comments for discussion during Review Team meetings.
8. The Review Team Leader will chair Team discussions of the Team's findings and recommendations.
9. The Review Team Leader will arrange for a Closeout Session with the Project prior to the end of the site visit, and will provide the Team and the Project with draft copies of the Review Report. The Review Team Leader will lead discussions of the Team's Findings and Recommendations during the Closeout Session with the Project. The Team will present all major findings and recommendations at that time.
10. Any Team Member may submit a minority opinion on any unresolved issue. The Review Team Leader will add the minority opinion to the report.
11. Findings of the Review will be used as lessons learned to improve future Reviews.
12. All findings that relate to site or Departmental protocols and/or standards should be separately submitted to OECM and the PSO's Program Management Support Office as a supplemental report entitled "Project Management System Findings".

### 3.4 Pre-Review Activities

#### 3.4.1 Documentation for Review

One month prior to the Review, the principals should agree on the data/materials to be provided to the Review Team and when they will be provided. If the materials are provided during the onsite review, the Team Lead must schedule reading time for the Review Team to review the materials. The following list provides the materials and documents that should be requested for the Review Team. This list is not all-inclusive as other specific or unique documents may be supplied to the Review Team based on discussions with the FPM. Conversely, not all of the documentation listed will be required, depending on the Project size/scope and the phase of the Project being reviewed. Some of the material may not be available to the Review Team prior to the review but will be provided upon arrival at the site.

- ?? Acquisition Strategy
- ?? Statement of Mission Need
- ?? Functional Requirements
- ?? Integrated Project Team Responsibilities
- ?? Staffing Plan



?? Project Data Sheet for Design  
?? Technical Task request  
?? Program Plan  
?? Conceptual Design Plan  
?? Acquisition Plan  
?? Statement of Work  
?? PED Funding Plan  
?? Preliminary Project Execution Plan  
?? Source Selection Plan  
?? NEPA Documentation  
?? Integrated Safety Management Plan  
?? Quality Assurance Plan  
?? Conceptual Design Report  
?? Facility Design Descriptions  
?? System Design Descriptions  
?? Preliminary Hazards Analysis  
?? Risk Management Plan  
?? Project Execution Plan  
?? Preliminary Project Schedule  
?? Resource Loaded Integrated Schedule  
?? Preliminary Safety Analysis Report  
?? Completed Independent Cost Estimates  
?? Construction Project Data Sheet  
?? Preliminary (Title I) Design Report  
?? Final (Title II) Design Report  
?? Lists of Codes and Standards  
?? Completed Independent Cost Reviews  
?? Construction Design Documents and Drawings  
?? Equipment and Material Requisitions  
?? Performance Baseline  
?? Final Design and Procurement Packages  
?? Turnover and Startup Plan  
?? Final Safety Analysis Report  
?? Completed Independent Project Reviews  
?? Completed External Project Reviews  
?? Corrective Action Plans and Status  
?? Value Engineering Studies

#### **3.4.2 On Site Meeting Facilities and Resources**

Prior to the onsite review, the Team Lead and FPM should discuss the facilities and equipment needed for the review. The PSO's Program Management Support Office will facilitate. In non-limited areas, Team Members should be allowed to use personal computers and cell phones. Meeting rooms of adequate size and appropriately equipped should be arranged in advance of the review. Separate "break-out" rooms should be available for additional presentations and discussions. Access to outside phone lines and the Internet should be available to the review committee. The primary review facility should be equipped with an overhead projector, blank view graph medium and markers. Access to reproduction facilities should be convenient. Dedicated typing support for report writing should be arranged, if necessary.



### **3.5 Review Report**

#### **3.5.1 Overview**

The Team Lead will consolidate the individual Team Members Findings and Recommendations into a final report. The Team Lead will have the authority to edit the individual Findings and Recommendations for readability, but not for the purpose of changing the meaning. The Team Lead will issue the Report to OECM. The cognizant PSO, and the PSO's Program Management Support Office, who will subsequently issue the report to the cognizant A-E, Program Office and FPM.

Some of the site documentation (Conceptual Design Reports, drawings, Facility Design Descriptions, System Design Descriptions, etc.) examined during the review may be classified (e.g., OUO or UCN). Every effort should be made to ensure that the report is not classified by excluding such information from the report and incorporating it by reference. A review by a site derivative classifier may be required to ensure that no classified information is included in the report.

OECM has developed a standard outline to be used for reporting the Findings and Recommendations identified in all Independent Reviews. The purpose of establishing a standards review format is to focus the reviews on the requirements, recommendations, and standards as well as to facilitate extraction and tracking of findings and recommendations after the review. By focusing the Reviews, DOE can reduce the time and money spent on Reviews and make them more cost effective and productive in improving project management performance. Project Personnel and the Review Team should address issues which can substantially impact project performance; they should not waste time on "boiler plate" or "cosmetic" issues which do not generally determine the successful outcome of a project.

#### **3.5.2 General Guidance**

The Review Team comments shall be prepared as FINDINGS and limited to specific concerns and issues associated with the Review Team's focus area. They should include the Recommended Review Topics and Lines of Inquiry of Appendix B, as appropriate. If the FINDING states that corrective action is needed, the Reviewer shall provide a RECOMMENDATION for resolving it. The RECOMMENDATION should also provide priorities and/or timing for taking action.

A FINDING will be marked as ESSENTIAL if in the judgment of the Review Team:

- ? It reports a condition which does not satisfy applicable Federal regulations, DOE Orders, or agreements with regulatory agencies; or
- ? Prompt action must be taken for the Project to have a reasonable expectation of achieving its documented objectives; or
- ? Action must be taken before an ESAAB meeting should be scheduled (i.e., before the project proceeds).

The accompanying RECOMMENDATION may be implemented by the Project, or the Project may choose to initiate an alternative which it judges to be more effective.

Other non-essential or less critical FINDINGS and RECOMMENDATIONS should enhance the ability of the Project to address programmatic, operating and statutory requirements, project execution, cost estimates, schedules, and/or design aspects of the Project.

The Review Team Leader will provide a standard format for FINDINGS and RECOMMENDATIONS in the preliminary report outline. See Section 3.5.2.





The following is general guidance for the Review Teams:

1. The FINDING should not ask a question.
2. Provide separate FINDINGS for each distinct issue; do not combine multiple issues.
3. Provide consolidated FINDINGS for a common issue.
4. FINDINGS should be written succinctly and in a way that facilitates Project response.
5. Reviewers may provide general and specific FINDINGS by chapter and appendix.
6. Review FINDINGS, which reference requirements, should cite the reference.
7. Reviewers are expected to pursue clarification prior to preparing FINDINGS.
8. Reviewers may provide guidance on resolution of FINDING.
9. Editorial FINDINGS, such as those directed toward the documentation itself (including misspelling, mislabeling, sentence structure and so on) will not be provided.
10. A Reviewer who judges a FINDING to be ESSENTIAL should bring the FINDING to the attention of the entire Review Team for discussion. The entire Review Team should reach a consensus on whether to include the FINDING as ESSENTIAL. For these types, the Project should be consulted for Project input and to ensure factual accuracy, prior to finalizing the Report.

### **3.5.3 Outline**

OECM has established the following report outline to promote thorough and consistent reviews and reports, and to facilitate future data extraction efforts. Reports will follow a standard format to provide the Department with valuable data from which projects can be compared to improve the management process and provide feedback to Congress and the Operations/Field Offices. The reports for Independent Reviews should be organized as shown below. However, the Review Team is allowed to amend the following outline on an exception basis to appropriately address each specific review.



## SECTION 3.0 – STANDARD INDEPENDENT REVIEW PROCESS

**TABLE 3.4.3 A  
SAMPLE REPORT OUTLINE  
EIRs and IPRs**

SECTION 1 EXECUTIVE SUMMARY	
1.1	INTRODUCTION
1.2	SUMMARY OF FINDINGS
SECTION 2 REVIEW	
2.1	BACKGROUND
2.2	REVIEW PROCESS
2.2.1	Date and Place
2.2.2	<Insert Field Activity> Project Participants/ Personnel Interviewed
2.2.3	Review Team Members
2.2.4	Documentation Reviewed
2.2.5	Meetings
2.3	FINDINGS AND RECOMMENDATIONS
2.4	DESCRIPTION OF PROJECT
2.5	PROJECT BUDGETS AND MILESTONES
2.6	REVIEW RESULTS AND CONCLUSIONS
2.6.1	Project Goals and Mission Need
2.6.2	Management Systems, Controls, and Personnel Assignments
2.6.3	Acquisition Strategy
2.6.4	Security
2.6.5	Technical Scope
2.6.6	Cost Estimates and Funding
2.6.7	Schedule
2.6.8	Risk and Contingency Management
2.6.9	Environment, Safety and Health
2.6.10	Energy Conservation
2.6.11	Waste Minimization and Pollution Prevention
2.6.12	Value Engineering
APPENDIX A - DOCUMENTS REVIEWED	
APPENDIX B - REVIEW TEAM BACKGROUND	

**TABLE 3.4.3 B  
SAMPLE REPORT OUTLINE  
ICEs and ICRs**

SECTION 1 EXECUTIVE SUMMARY	
1.1	INTRODUCTION
1.2	SUMMARY OF FINDINGS
SECTION 2 REVIEW	
2.1	BACKGROUND
2.2	REVIEW PROCESS
2.2.1	Date and Place
2.2.2	<Insert Field Activity> Project Participants/ Personnel Interviewed
2.2.3	Review Team Members
2.2.4	Documentation Reviewed
2.2.5	Meetings
2.3	FINDINGS AND RECOMMENDATIONS
2.4	DESCRIPTION OF PROJECT
2.5	PROJECT BUDGETS AND MILESTONES
2.6	REVIEW RESULTS AND CONCLUSIONS
2.6.1	General Findings
2.6.2	Specific Findings
2.6.2.1	General
2.6.2.2	Sitework
2.6.2.3	Concrete
2.6.2.4	Masonry
2.6.2.5	Metals
2.6.2.6	Wood and Plastic
2.6.2.7	Thermal and Moisture Protection
2.6.2.8	Doors and Windows
2.6.2.9	Finishes
2.6.2.10	Specialties
2.6.2.11	Equipment
2.6.2.12	Furnishings
2.6.2.13	Special Construction
2.6.2.14	Conveying Systems
2.6.2.15	Mechanical
2.6.2.16	Electrical
APPENDIX A - DOCUMENTS REVIEWED	
APPENDIX B - INDEPENDENT COST ESTIMATE	
APPENDIX C - REVIEW TEAM BACKGROUND	

### 3.5.4 Report Format

Reports should be formatted as follows:

Margins: 1 inch (all side s)  
Font Type: Arial

Font Size: 10 Point (Text in Body and Tables)  
8 Point (Text in Footnotes)

Header: DOE logo flush with the left margin; "TABLE OF CONTENTS", "SECTION 1 - EXECUTIVE SUMMARY", or "SECTION 2 - REVIEW" flush with the right margin; and a horizontal line under both items.

Footer: The date flush with the left margin; and the Project title and Review type flush with the right margin (two lines: Project Title over Review type); and a horizontal Line over both items.



### **3.6 On-Site Activities**

The on-site Review is conducted as outlined by the Review Plan. The schedule for the Review is prepared by the Team Lead in coordination with the FPM.

During the Review each individual team member conducts his or her own review of documents and interviews personnel. Even though some project personnel provide presentations to the review team as a whole, the individual reviewers are responsible for analyzing and assessing the assigned subject matter and providing a written report of their findings and recommendations. Where more efficient, group interviews should be scheduled with breakout sessions. The final report issued to OECM, the PSO's Program Management Support Office, Program Office, and FPM is a compilation of the individual reports.

#### **3.6.1 Resources**

The FPM shall provide on-site resources for the Review Team as discussed in Section 3.4, Pre-Review Activities.

#### **3.6.2 Kick-Off Session**

The first item on the agenda should be a "Kick-Off Session." This is an opportunity to conduct formal introductions and review the charge to the Review Team, review procedures, and logistics. Attendance is usually limited to the review team and DOE observers (e.g., OECM and PSO representatives), FPM, and Project personnel.

At the Kick-Off Session the Project will provide an overview of the Project and its status. This will be in the form of formal presentations by appropriate project personnel to the review team using support materials such as view graphs, charts, drawings or photos. Presentations should be concise, allowing for questions and answers within the allotted time. View graphs should be structured consistently from presenter to presenter and be clear and not excessive with information. Detail information should be transmitted via supplemental handout documents. The review team is the primary audience for the presentations, but other individuals may attend, particularly if their presence may be advantageous to any line of questioning from the review team. When the agenda calls for discussion time, or at the conclusion of a particular topic presentation, a more informal round-table format is appropriate.

#### **3.6.3 Interviews**

The Project Team will interview Project personnel to obtain additional information and clarify any issues. The Interview periods will be coordinated with the FPM in advance to minimize disruptions.

#### **3.6.4 Closeout Session**

At the close of the review, a "Closeout Session" will be conducted. At this time the review team presents the results of the review. Comments and recommendations are presented and action items are agreed upon. Informal presentations are made by the individual team members assigned to each topic under review, following the draft report outline. Depending on the circumstances, the attendance at this session may or may not be limited. A separate briefing with site management may also be arranged as appropriate. Copies of materials presented at the Closeout are usually provided.

### **3.7 Post-Review Requirements**



### 3.7.1 Report Preparation

The report is divided into sections that are assigned to individual team members for writing (see Section 3.3). Writing may commence prior to the review, based on information provided in advance. Time will be allowed in the review agenda for writing prior to the Closeout Session, when possible. The intention is to provide the FPM with a draft list of the major Findings before the review committee leaves the site, or when possible to provide a draft report. The draft report will be reviewed by a designated editor to provide consistency without changing content. The draft report will then be provided to the review team for a final review. It will also go to the FPM for a factual accuracy check. Comments will be resolved and incorporated by the editor and a final report generated. The Team Lead will issue the Report to OECM and the PSO's Program Management Support Office, who will subsequently issue the report to the Program Office and FPM.

Committee members are encouraged to bring portable computers and do word processing, but support may be made available at the site.

### 3.7.2 Factual Accuracy

The FPM and cognizant Program Office are responsible for conducting a factual accuracy analysis of all Findings and Recommendations identified in the review. From this factual accuracy analysis the PSO's Program Management Support Office will provide OECM a written response stating concurrence or rejection of the report and identify specific issues with proposed measures to resolve the dispute. This Memorandum will be filed with OECM one week after submittal of the draft report.3.7.2

### 3.7.3 Corrective Action Plan/Shell Development and Tracking

The Team Lead will develop a Corrective Action Plan (CAP) shell that lists the Recommendations and associated references to the Report. The Team Lead will issue the CAP shell to OECM and the PSO's Program Management Support Office, who will subsequently issue the report to the Program Office and FPM. The CAP will be completed by the Field to discuss how issues identified in the review will be addressed and resolved. The completed CAP will be transmitted electronically by the FPM to the PSO, the PSO's Program Management Support Office and the cognizant Program Manager, who will include it in the PSO Memorandum to OECM. A CAP shell is prepared by the Review Team to facilitate the effort by the Project Team to address the Review recommendations. The CAP shell contains only the report recommendations in the CAP format. The Project team is responsible for preparing and maintaining the CAP once a CAP shell is submitted by the Review Team.

#### **The Project completed CAP must:**

- ? List the "Recommendation" for each "Finding" from the Independent Review report
- ? Provide a discussion of the required action
- ? Proposed start and end dates for the corrective action
- ? Identify office to which the corrective action has been assigned
- ? An open or closed status remark

The projected resolution date will trigger reminders from the PRMS document handling system when updated CAP information is expected. CAPs are to be updated by the FPM periodically and prior to ESAAB decision prebriefs as issues are addressed, and submit an electronic copy to OECM. Issues will be tracked by the PSOs, PMSOs, and OECM. OECM will track issues in its automated central tracking system. The PSO's Project Management Support Office shall have access to OECM's automated central tracking system. Open actions will be monitored at Critical Decisions points, Quarterly Reviews, as well as during External and Independent Reviews

**4.0 ORGANIZATIONAL RESPONSIBILITY**

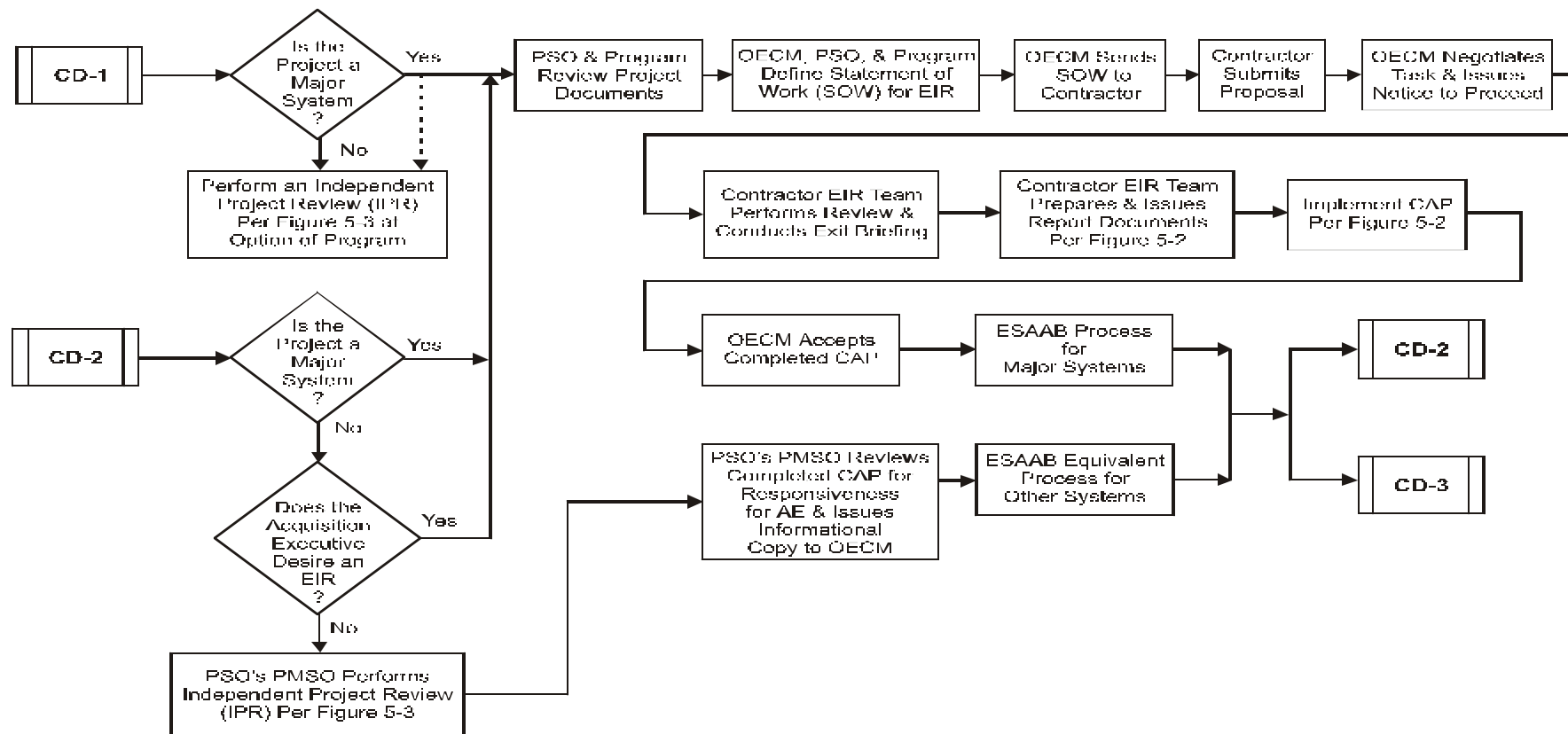
<b>MAJOR PROJECTS: FUNCTIONS</b>				
<b>ORGANIZATION</b>	<b>EIR</b>	<b>IPR</b>	<b>ICE</b>	<b>ICR</b>
<b>OECM</b>	Executes	Receives Copy	Executes	Receives Copy
<b>PMSO</b>	Facilitates	Executes	Facilitates	Executes
<b>Program Office</b>	Facilitates	Facilitates	Facilitates	Facilitates
<b>FPM</b>	Supports	Supports	Supports	Supports
<b>Project</b>	Supports	Supports	Supports	Supports
<b>Review Team</b>	Conducts	Conducts	Conducts	Conducts

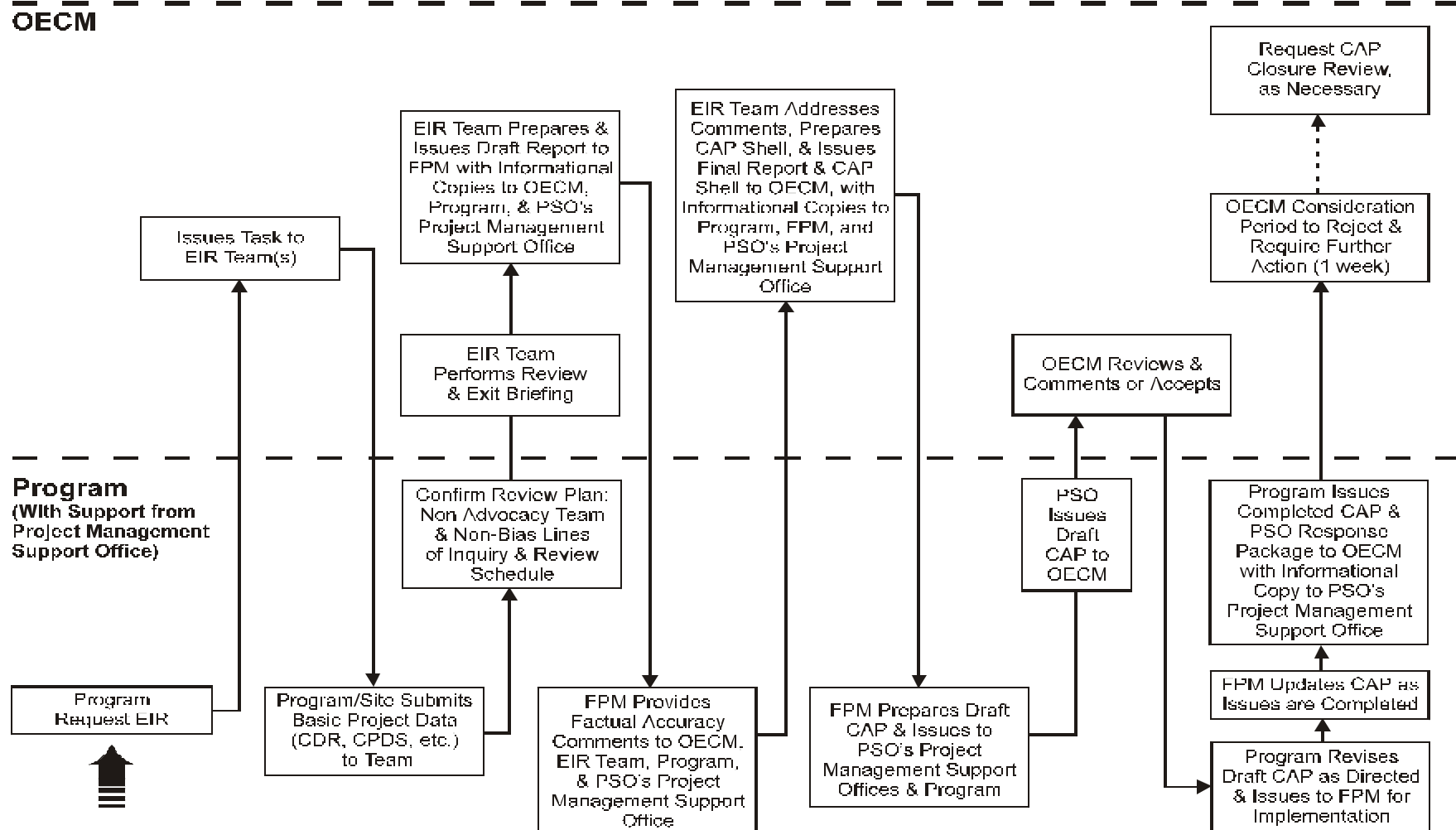
<b>OTHER PROJECTS: FUNCTIONS</b>				
<b>ORGANIZATION</b>	<b>EIR</b>	<b>IPR</b>	<b>ICE</b>	<b>ICR</b>
<b>OECM</b>	Executes	Receives Copy	Executes	Receives Copy
<b>PMSO</b>	Facilitates	Executes	Facilitates	Executes
<b>Program Office</b>	Facilitates	Facilitates	Facilitates	Facilitates
<b>FPM</b>	Supports	Supports	Supports	Supports
<b>Project</b>	Supports	Supports	Supports	Supports
<b>Review Team</b>	Conducts	Conducts	Conducts	Conducts

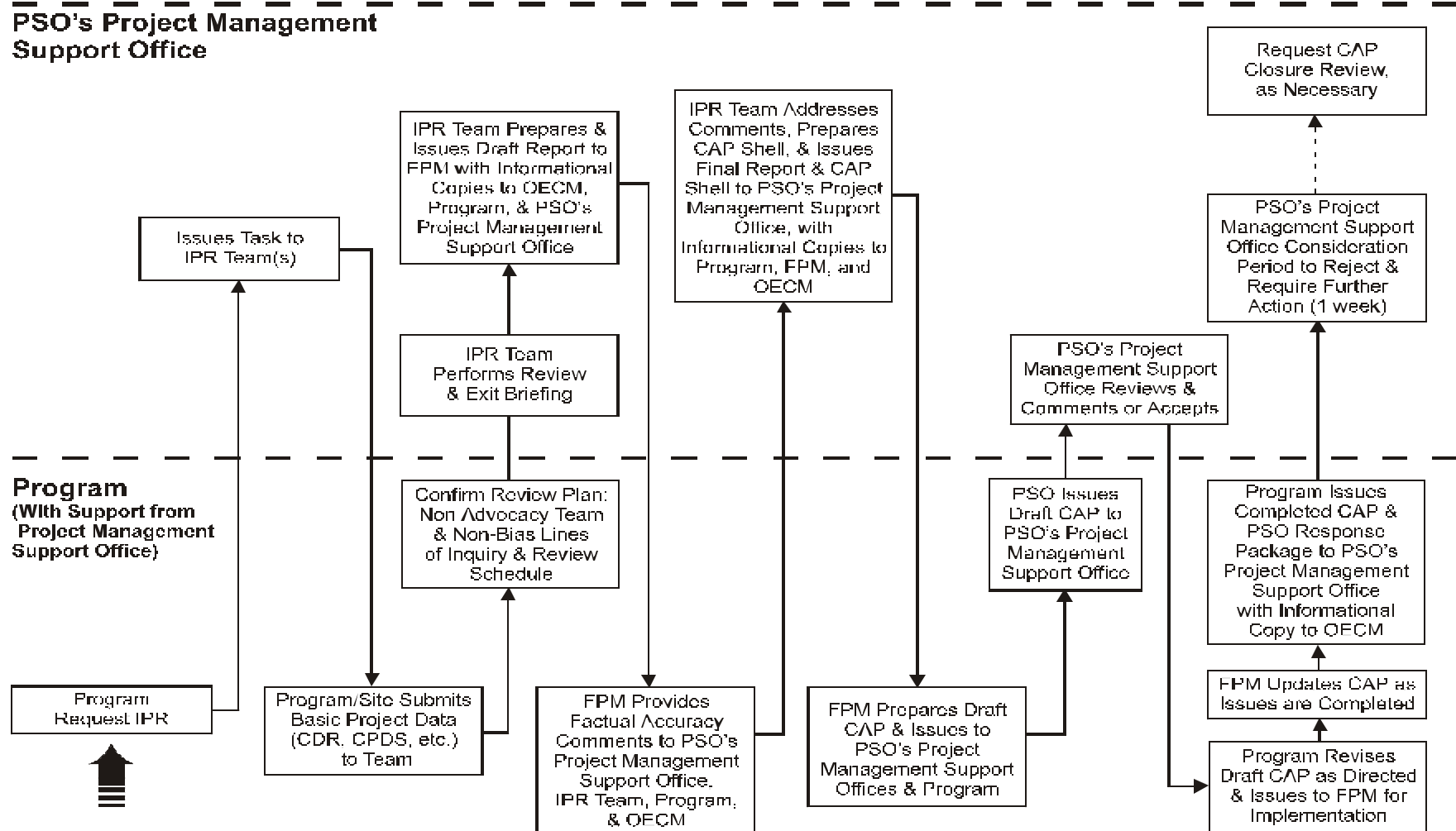


## 5.0 PROCESS CHARTS

**Figure 5-1 Review Process For  
CD-2: Approve Preliminary Baseline  
CD-3: Approve Start Of Construction**



**Figure 5-2 EIR Process Flow**

**Figure 5-3 IPR Process Flow**





## 6.0 TYPICAL REVIEW TIME LINE

There are two basic types of Reviews, External Independent Reviews (EIR) and Independent Project Reviews (IPR). The EIR may also include an Independent Cost Estimate (ICE) and the IPR may also include an Independent Cost Review (ICR). Typical review Schedules for each of the basic Project reviews are provided below. The timing for each activity may vary with individual projects depending on the size and complexity of the Project. A graphic of the EIR Process, figure 6.2, is found on page 25.

### 6.1 Independent Project Review Timeline

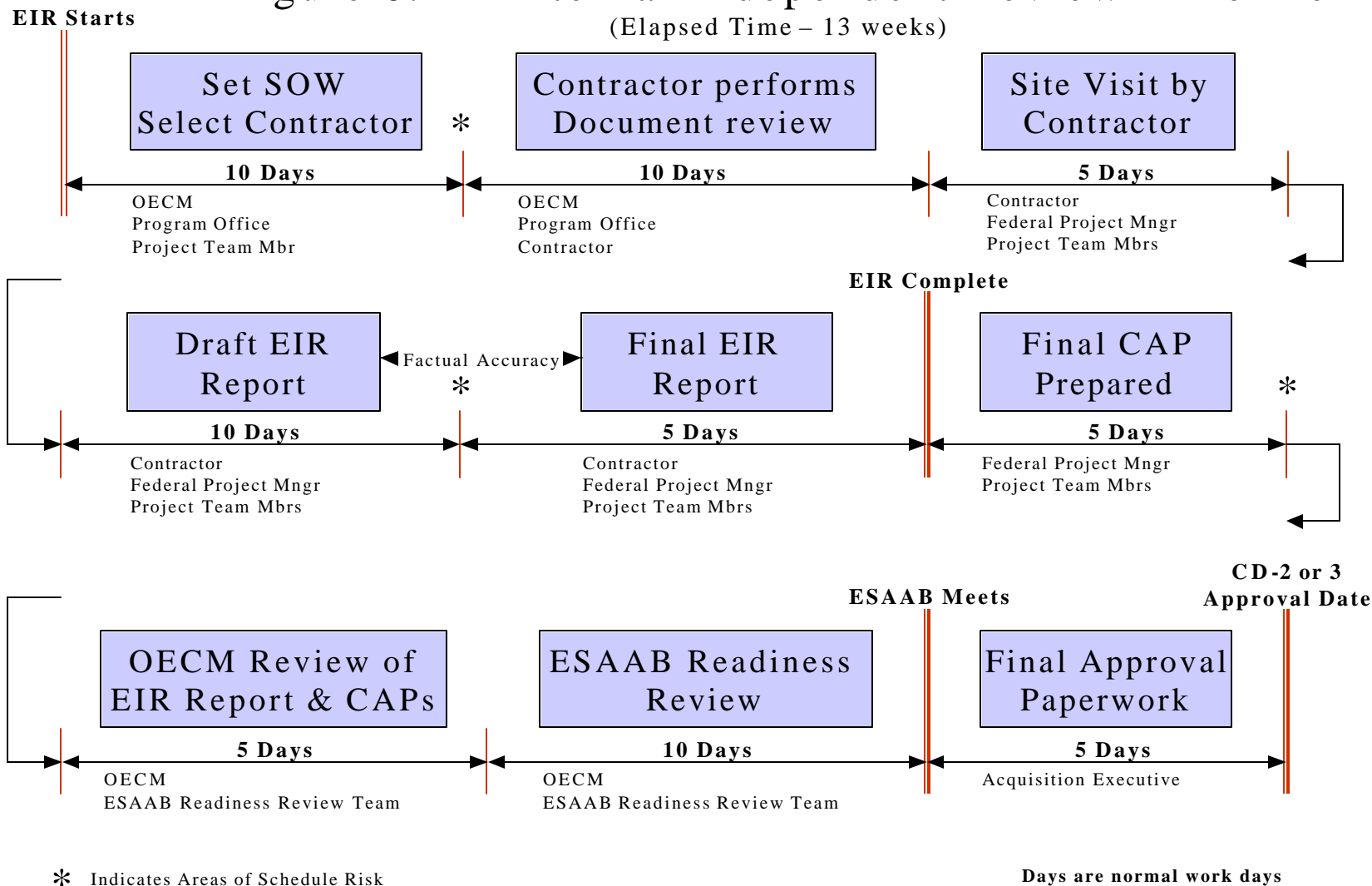
<u>Activity</u>	<u>Relative to Begin Review</u>
Project Review Start Date Identified	-3 weeks
Team Members Contacted	-3 to -2 weeks
Review Plan Draft	-2 weeks
Team Established	-1 to -2 weeks
Review Plan Finalized	-1 to -2 weeks
Advance Review Material Prepared/Distributed	-1 to -2 weeks
Conference Call with Review Team	-3 days
Begin Review	0
Complete Review/Closeout Presentation to Project	+3 to +5 days
Draft to FPM for Factual Accuracy (FA)	+3 business days after review complete
Factual Accuracy by FPM and Project	+3 to +5 days after receipt
Complete/Approve Final Report	+3 to +5 days after FA comment receipt
Corrective Action Plan to FPM and Project	+3 to +4 days after report approval

### 6.2 External Independent Review Timeline

<u>Activity</u>	<u>Relative to Begin Review</u>
Set SOW and Select Contractor	-4 weeks
Contractor Performs Document Review	-2 weeks
Begin Review	0
Complete Review/Closeout Presentation to Project	+1 week
Draft to FPM for Factual Accuracy (FA)	+3 weeks
Factual Accuracy Review	+3 to +4 weeks
Complete Final Report	+4 weeks
Corrective Action Plan to FPM and Project	+5 weeks
OECM Review off EIR and CAP	+6 weeks
ESAAB Readiness Review	+8 weeks



Figure 6.2 - External Independent Review Timeline





**OFFICE OF ENGINEERING AND CONSTRUCTION MANAGEMENT  
OFFICE OF PROJECT MANAGEMENT SUPPORT  
INDEPENDENT REVIEW PROCEDURE  
  
APPENDIX A - SAMPLE REPORT**



**EXTERNAL INDEPENDENT REVIEW  
<Review Type> REVIEW  
OF THE  
<title (acronym)>**

**PROJECT NO. <number>**

**AT**

**<site (acronym)>**

**<date>**





## TABLE OF CONTENTS

<Begin this section on a new page.>

**TABLE OF CONTENTS**

SECTION 1	EXECUTIVE SUMMARY .....	<#>
1.1	INTRODUCTION .....	<#>
1.2	SUMMARY OF FINDINGS.....	<#>
SECTION 2	REVIEW.....	<#>
2.1	BACKGROUND .....	<#>
2.2	REVIEW PROCESS .....	<#>
2.2.1	Date and Place .....	<#>
2.2.2	<Insert Field Activity> Project Participants/Personnel Interviewed.....	<#>
2.2.3	Review Team Members .....	<#>
2.2.4	Documentation Reviewed .....	<#>
2.2.5	Meetings .....	<#>
2.3	FINDINGS AND RECOMMENDATIONS .....	<#>
2.4	DESCRIPTION OF PROJECT.....	<#>
2.5	PROJECT BUDGETS AND MILESTONES.....	<#>
2.6	REVIEW RESULTS AND CONCLUSIONS.....	<#>
2.6.1	Project Goals and Mission Need.....	<#>
2.6.2	Management Systems, Controls, and Personnel Assignments.....	<#>
2.6.3	Acquisition Strategy .....	<#>
2.6.4	Security .....	<#>
2.6.5	Technical Scope .....	<#>
2.6.6	Cost Estimates and Funding .....	<#>
2.6.7	Schedule.....	<#>
2.6.8	Risk and Contingency Management .....	<#>
2.6.9	Environment, Safety and Health.....	<#>
2.6.10	Energy Conservation.....	<#>
2.6.11	Waste Minimization and Pollution Prevention.....	<#>
2.6.12	Value Engineering .....	<#>
APPENDIX A	- DOCUMENTS REVIEWED.....	<#>
APPENDIX B	- REVIEW TEAM BACKGROUND .....	<#>

<Date>

i

<Acronym> PROJECT



## SECTION 1 - EXECUTIVE SUMMARY

*<Begin this section on a new page.>*

**INDEPENDENT PROJECT *<Insert the Type of Review>* REVIEW OF THE  
*<Insert Project Title>*  
PROJECT NO. *<Insert Project Number>*  
AT  
*<Insert Site Name>***

### SECTION 1 - EXECUTIVE SUMMARY

#### 1.1 INTRODUCTION

*<Explain why the Review is being performed, and generally discuss the Team and criteria for the Review.>*

#### 1.2 SUMMARY OF FINDINGS

*<Explain how the results from the Review will be presented. This should include a discussion about how the Team reached conclusions about whether or not a project is ready to move forward and initiate the next step in the project process (i.e., YES or NO). "YES", "NO", and "ACTION REQUIRED" should be defined and the effect of each label should be documented.>*

*<List and discuss each of the subject areas reviewed in accordance with Section 2.6 below. Provide a summary of the FINDINGS and RECOMMENDATIONS for each of the subject areas. Explain all FINDINGS-ESSENTIAL>*

*<Date>*

1

*<Acronym>* PROJECT



*<Begin this section on a new page.>*

**EXTERNAL INDEPENDENT REVIEW**  
***<Insert the Type of Review> REVIEW OF THE***  
***<Insert Project Title>***  
**PROJECT NO. *<Insert Project Number>* AT *<Insert Site Name>***

**SECTION 2 - REVIEW**

**2.1 BACKGROUND**

During the past two years, the Office of Engineering and Construction Management (OECM) conducted External Independent Reviews of most of its fiscal year (FY) 1999 and 2000 new starts to provide the Program Office with feedback on the status of projects. The reports summarizing these Reviews have followed a standard format to provide the Department with valuable data from which projects can be compared to improve the management process and provide feedback to Congress and the Operations/Field Offices.

In a 1998 report on DOE projects, the National Research Council (NRC) stated that the Independent Project Review will provide an objective, rigorous review and document and process audit of the project scope, underlying assumptions regarding technology, the cost and schedule baselines, and the acquisition and program management strategies and practices employed by the Department to manage and control program technical requirements, cost, and schedule baselines.<sup>1</sup>

The purpose of this Independent Review Process is to ensure rigorous and systematic Reviews of Projects at key stages in the Project life cycle. This Review Process provides a standard methodology and report format for Independent Reviews of DP Projects. Independent Reviews are performed by personnel having no direct role or interest in the execution or outcome of the Project being reviewed.

**2.2 REVIEW PROCESS**

**2.2.1 Date and Place:** *<Insert Beginning Date of Review> - <Insert Ending Date of Review> at <Insert Location>*

<sup>1</sup> *Assessing the Need for Independent Project Reviews in the Department of Energy*, National Research Council, National Academy Press, 1998.

*<Date>*

2

*<Acronym> PROJECT*  
*<Review Type>*



---

**2.2.2 <Insert Field Activity> Project Participants/Personnel Interviewed**

<List the name, Field Activity, and specialty/division of each participant and personnel interviewed.>

**2.2.3 Review Team Members**

Team Leader: <Insert name, Organization>

<Insert each Subject  
Area Reviewed>

Lead - <Insert name and organization of the lead by subject  
area reviewed>

Team Members - <Insert name and organization of each  
Team Member by subject area reviewed>

A resume for each Review Team Member is provided in Appendix B.

**2.2.4 Documentation Reviewed**

A list of documents reviewed during the course of the Review is provided in Appendix A.

**2.2.5 Meetings**

<Provide a discussion of the meetings that transpired during the Reviews, including the dates and organizations represented in these meetings.>

**2.3 FINDINGS AND RECOMMENDATIONS**

The Review Team comments are prepared as FINDINGS and limited to specific concerns and issues associated with the Review Team's focus area(s). If the FINDING states that corrective action is needed, a RECOMMENDATION for resolving it is provided. The RECOMMENDATION also provides priorities and/or timing for taking action.

A FINDING is marked as ESSENTIAL if in the judgement of the Review Team:

- ? It reports a condition which does not satisfy applicable Federal regulations, DOE Orders, or agreements with regulatory agencies; or
- ? Action must be taken for the Project to have a reasonable expectation of achieving its documented objectives; or
- ? Action must be taken before the Review Team can make a judgement that the Project is ready to move to its next stage of implementation.





## SECTION 2 - REVIEW

The accompanying RECOMMENDATION is a suggestion to the Project, which may be implemented by the Project, or the Project may choose to initiate an alternative which it judges to be more effective.

For other FINDINGS, RECOMMENDATIONS are intended to enhance the ability of the Project to address programmatic, operating and statutory requirements, project execution, cost estimates, schedules, and/or design aspects of the Project.

### 2.4 DESCRIPTION OF PROJECT

*<Provide a description of the Project from the latest Construction Project Data Sheet (CPDS) description shall include Mission Need, Project Justification and Goals, and Project Description Project.>*

### 2.5 PROJECT BUDGETS AND MILESTONES

*<Provide Project budget and milestones in tabular form. In the first Table, the Cost Milestones include: TEC, OPC, and TPC; and the Schedule Milestones shall include: Procure AE, Design Start Duration, Construction Start, and Construction Complete, as appropriate. The second table shall provide Funding Profiles - Obligations for the five upcoming fiscal years. Each table shall state which CF the data source.>*

### 2.6 REVIEW RESULTS AND CONCLUSIONS

*<This section will address each of the subject areas of the Review by subject area. The list below be modified to conform to each Review performed. Discussions shall include Findings from the Where appropriate, a Finding will be accompanied by a Recommendation. Findings should be numbered consecutively (do not start a new sequence for each subject area). A sample page is provided at the end of this section to illustrate how to format the Findings and Recommendations.*

*The analysis shall include required changes and recommended alternative approaches to eliminate deficiencies identified.*

*Recommendations shall be sufficiently worded (i.e., stand alone) so that they can be quoted in the CAP without requiring a reference to or words from the associated Finding. See Section A.4.1. A sample format for Findings and Recommendations is provided at the end of this section.>*

<Date>

4

<Acronym> PROJECT



---

### 2.6.1 Mission Need and Project Goals

**Findings:**

1. *<Insert the Findings>*

Recommendation: *<Insert the Recommendations>*

### 2.6.2 Management Systems, Controls, and Personnel Assignments

**Findings:**

*<#>. <Insert the Findings>*

Recommendation: *<Insert the Recommendations>*

### 2.6.3 Acquisition Strategy

**Findings:**

*<#>. <Insert the Findings>*

Recommendation: *<Insert the Recommendations>*

### 2.6.4 Security

**Findings:**

*<#>. <Insert the Findings>*

Recommendation: *<Insert the Recommendations>*

### 2.6.5 Technical Scope

**Findings:**

*<#>. <Insert the Findings>*

---

*<Date>*



---

**Recommendation:**     *<Insert the Recommendations>*

#### **2.6.6    Cost Estimates and Funding**

**Findings:**

*<#>.    <Insert the Findings>*

**Recommendation:**     *<Insert the Recommendations>*

#### **2.6.7    Schedule**

**Findings:**

*<#>.    <Insert the Findings>*

**Recommendation:**     *<Insert the Recommendations>*

#### **2.6.8    Risk and Contingency Management**

**Findings:**

*<#>.    <Insert the Findings>*

**Recommendation:**     *<Insert the Recommendations>*

#### **2.6.9    Environment, Safety and Health**

**Findings:**

*<#>.    <Insert the Findings>*

**Recommendation:**     *<Insert the Recommendations>*

#### **2.6.10   Energy Conservation**

**Findings:**



---

<#>. <Insert the Findings>

**Recommendation:** <Insert the Recommendations>

#### **2.6.11 Waste Minimization and Pollution Prevention**

**Findings:**

<#>. <Insert the Findings>

**Recommendation:** <Insert the Recommendations>

#### **2.6.12 Value Engineering**

**Findings:**

<#>. <Insert the Findings>

**Recommendation:** <Insert the Recommendations>



APPENDIX A - DOCUMENTS REVIEWED

---

*<Begin this section on a new page.>*

**INDEPENDENT PROJECT *<Insert the Type of Review>* REVIEW OF THE  
*<Insert Project Title>*  
PROJECT NO. *<Insert Project Number>*  
AT  
*<Insert Site Name>***

**APPENDIX A - DOCUMENTS REVIEWED**

1. *<Provide citations for documents reviewed. Provide document title, organization, Project Title, revision number, and date, if known.>*

---

*<Date>*

8

*<Acronym>* PROJECT



## APPENDIX B - REVIEW TEAM BACKGROUND

*<Begin this section on a new page.>*

**INDEPENDENT PROJECT *<Insert the Type of Review>* REVIEW OF THE  
*<Insert Project Title>*  
PROJECT NO. *<Insert Project Number>*  
AT  
*<Insert Site Name>***

### **APPENDIX B - REVIEW TEAM BACKGROUND**

*<Provide a one page resume for each Review Team Member. Centered on the top of the page, list the Name of the Team Member, Organization, Telephone number, Fax Number, and e-mail (each on a separate line). Resumes should only have the following headings: Education, Experience, and Certification/Professional Affiliations. Do not show Employment History. A sample resume is provided in this section.>*

*<Date>*

9

*<Acronym>* PROJECT



<Begin this section on a new page.>

**ROGER R. RABBIT**  
**U. S. Department of Energy**  
**Defense Programs - DP-40.1**  
**19901 Germantown Road**  
**Germantown, MD 20874**  
**Telephone: (301)903-3037**  
**email: roger.rabbit@ns.doe.gov**

### **EDUCATION**

Masters Degree in Civil Engineering, University of Maryland, 1998  
Bachelors in Civil Engineering, University of Illinois, 1990

### **EXPERIENCE SUMMARY**

Over nine years of experience working DOE capital projects. Various responsibilities have included details to all DP (and most EM) field site project management offices. Served on and/or supported numerous DP Readiness Reviews conducted over the last year. Previously assigned as the DOE Business Systems Manager for the Accelerator Production of Tritium Field Project Office during source selection and conceptual design phases of the project. Other project related duties include technical support to the Nonnuclear Reconfiguration & Rapid Reactivation Projects and policy development.

### **CERTIFICATION/PROFESSIONAL AFFILIATIONS**

Professional Engineer, Maryland, No. 7783  
American Nuclear Society (ANS)  
American Society of Civil Engineers (ASCE)  
American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE)  
Association for Advancement of Cost Engineering (AACE)  
Institute of Industrial Engineering (IIE)  
American Society for Quality (ASQ)  
American Concrete Institute (ACI)  
ABET Accreditation Official

<Date>

10

<Acronym> PROJECT



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*<Begin this section on a new page.>*

**INDEPENDENT PROJECT *<Insert the Type of Review>* REVIEW OF THE  
*<Insert Project Title>*  
PROJECT NO. *<Insert Project Number>*  
AT  
*<Insert Site Name>*  
APPENDIX *<Insert Title of Appendix>***

*<Insert other appendices as appropriate.>*





## SECTION 2 - ASSESSMENTS RESULTS

**2.6.3 Acquisition Strategy****Findings – Essential**

30. Referring to Essential Finding No. 1 in Section 2.6.2, SNL was directed to contract for a construction management firm to manage the Project. Essential duties would include construction inspection, scheduling, project controls, progress payments, monthly reporting, and change control. The firm would report directly to SNL, but provide monthly reports to DOE/HQ. The Strategic Computing Complex (SCC) provides a model for this relationship.

**Recommendation:** Essential Finding No. 1 in Section 2.6.2: SNL should update and revise the cost estimate, CPDS, schedule activities, and Project Execution Plan to reflect Dr. Weigand's direction. The construction management firm should be in place to review and have input to the design criteria, acquisition/procurement documents, project reporting and review process.

31. CDR Chapter 5.0 Acquisition Strategy, page 5-14, Project Execution Plan (PEP), paragraph 4: The PEP indicates the possible benefits of utilizing the AE services of the firm selected for the JCEL project. The schedule does not show associated projects, nor does the write-up indicate potential impacts to the MESA subprojects. The utilization of the Construction Management firm, as directed by Dr. Weigand, has not been discussed as to how this affects the interface with JCEL, nor has the impact of design-only funding been addressed.

**Recommendation:** CDR chapter 5.0 Acquisition Strategy, page 5-14, PEP, paragraph 4: The schedule and acquisition/ procurement strategy need to reflect all aspects of associated projects and the write-up should be clear on how the C firm will interface with both projects since the procurement documents for MESA may be different than the WIF and JCEL.

32. The MESA Project acquisition strategy is highly dependent upon the funding profile. Even marginal funding delays could require utilization of traditional contracting strategies in lieu of Design-Build, for instance. The possible limitation on FY 2001 activities to design-only also

OCTOBER 19, 1999

8

MESA PROJECT

**Sample finding and Recommendation Page**



# APPENDIX A - SAMPLE REPORT

## Sample Review Schedule

GWS (3/29-4/2/99)		Affiliation	MONDAY		TUESDAY		WEDNESDAY		THURSDAY		FRIDAY	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
REVIEW TEAM												
Jones, George	Mechanical	COE	Overview	Design	Design	Design	Design	Design	VE	TBD / VE Follow-up	Report	Closeout <opt>
Smith, Mike	Structural	COE	Overview	Design	Design	Design	Design	Design	VE	TBD / VE Follow-up	Report	Closeout <opt>
Long, John	Electrical	COE	Overview	Design	Design	Design	Design	Design	VE	TBD/VE Follow-up	Report	Closeout <opt>
Simms, Sarah	Architectural/ VE Lead	COE	Overview	Design	Design	Design	Design	Design	VE	Report / VE Follow-up	VE Report	Closeout
Grapes, Lee	Security	COE	Overview	Design	Report							
Terry, Ace	Cost Review	BD&E	Overview	Cost Factors	Cost	Cost	Cost	Cost	Cost	Cost	Report	Closeout
Widman, Betty	Check Estimate	PPI	Overview	Cost Factors	Check Est	Check Est	Check Est	Check Est	Check Est	Check Est	Report	Closeout
Flake, Ronnie	Team Lead/Various	AE Firm	Overview	Mgmt/ Schedule	Procurement	PJ Mgmt	Design	Cost	Cost	Report	Report	Closeout
Hogan, Peter	Facility Engineering	NSA	Overview	Design	Design	Design	Design	Design	VE	TBD / VE Follow-up	Report	Closeout <opt>
ADVISORS												
White, Ken	Business Systems	LLNL	Overview	Mgmt	Mgmt	PJ Mgmt	PJ Mgmt	Analysis				
Powell, Prince	Business Systems	ABC	Overview	Schedule	Schedule	PJ Mgmt	PJ Mgmt	Analysis				
McCoy, Mike		ABC	Overview	Cost Factors	O&M	LCC	Analysis	VE Cost	VE Cost	VE Cost	Analysis	
Gibson, Scott		ABC	Overview	EE/Spec	O&M	LCC	Analysis					
Dodson, Sam	Procurement	C&D	Overview	Procurement	Procurement	Proc/Analysis						
DP-6 ON-SITE REPRESENTATIVE												
Jim, Sharoe												
Objectives Value Engineering Review <Focused> Validation Review Design Review Procurement Readiness Review Constructability Review <Limited> Internal Independent Assessment												



**OFFICE OF ENGINEERING AND CONSTRUCTION MANAGEMENT  
OFFICE OF PROJECT MANAGEMENT SUPPORT  
INDEPENDENT REVIEW PROCEDURE  
  
APPENDIX B - CAP SHELL SAMPLE**



## Sample Corrective Action Plan Shell

### GWS PROJECT (GWS) Corrective Action Plan (External Independent Review)

Actions Summary (/9/3099)

- ? XX Recommendations reported:
- ? XX Positive Recommendations; no action required.
- ? XX Recommendations; action completed.
- ? X Recommendation; ongoing actions through end of

project.

XX Statements (RC – Root Cause)

ID No.	Section Ref	Pg Ref	Recommendation	Required Action (Discussion)	Action Office	Start/ Compl	Current Status	Site Use	Review Team Perspective
R01	Proj. Goals & Mission	X	<Insert Recommendation as written in report>						
R02	Proj. Goals & Mission	X	<Insert Recommendation as written in report>						
R03	Mgt. Sys. & Personnel	X	<Insert Recommendation as written in report>						
R04	Cost Est. & Funding	X	<Insert Recommendation as written in report>						
R05	Cost Est. & Funding	X	<Insert Recommendation as written in report>						
R06	Schedule	X	<Insert Recommendation as written in report>						
R07	Schedule	X	<Insert Recommendation as written in report>						
R08	Risk & Contingency	X	<Insert Recommendation as written in report>						
R09	ES&H	X	<Insert Recommendation as written in report>						

<Note: See Appendix A.5.3>



## **APPENDIX C - PSOs RESPONSE PACKAGE**

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### **OFFICE OF ENGINEERING AND CONSTRUCTION MANAGEMENT OFFICE OF PROJECT MANAGEMENT SUPPORT INDEPENDENT REVIEW PROCEDURE**

### **APPENDIX C - PROGRAM SECRETARIAL OFFICER'S RESPONSE PACKAGE**

DOE F 1325.8  
(08-93)

United States Government

Department of Energy

# memorandum

DATE:

REPLY TO

ATTN OF: Snyder, DP-6: 3-4047

SUBJECT: Departmental Response on External Independent Review of Defense Programs Project

TO: Clair Gill, Director, Office of Engineering and Construction Management

Attached is Defense Program's response and Corrective Action Plan (CAP) relevant to the External Independent Review report on the Central Engineering Laboratory project.

It is our understanding that your office will perform a final review of the proposed submittals. If we have not heard from you within two weeks, we will assume that the report and CAP are acceptable.

If there are any questions relating to the attached responses, please coordinate them with <insert Program Office POC> or if unavailable <insert PSO's Project Management Support Office POC>.

&lt;PSO&gt;

Attachments (1)

cc:

<insert NNSA Administrator, if relevant>  
<insert Project Management Support Office POC>  
<insert Program Office POC>  
<insert OECM EIR POC>  
<insert OECM Program POC, if different>  
<insert FPM>

Concurrence:

<Project Management  
Support Office  
Representative>

<PSO Program  
Office  
Representative(s)>

<Organization>  
<date>

<Organization>  
<date>

&lt;Add other concurrences as required&gt;

**ISSUANCE MEMO (SAMPLE)**



**PROGRAM SECRETARIAL OFFICER RESPONSE (SAMPLE)**

**Defense Programs Response to the  
External Independent Review of 00-D-107  
Central Engineering Laboratory**

The External Independent Review of the Central Engineering Laboratory (CEL) was conducted during May 2000 by CETROM Consulting Engineering, Inc. The overall findings of the assessment team were positive in affirming:

- ? CEL mission need and justification is clear and well defined
- ? Six project alternatives were evaluated and the project team selected the appropriate alternative.
- ? DOE HQ directed changes do not invalidate the selection of the preferred alternative and that the changes enhance the capability of CEL to support the mission.
- ? project poses no special technical/R&D requirements
- ? cost estimate is reasonable
- ? planned schedule is achievable
- ? Acquisition Strategy is satisfactory
- ? project is of low risk
- ? CEL project team very responsive in addressing Defense Programs Independent Project Review actions

Defense Programs appreciates the review and endorsement of the CEL project by CETROM and will responsibly address their recommendations in the project. Specifically, the following overall recommendations of the report:

1. The following baseline documents should be approved prior to proceeding into Preliminary Title I design:
  - ? BCP for scope, cost and schedule to reflect Transition Plan
  - ? Revised PEP that reflects BCP and recommendations of EIR and DP Independent Project Review
  - ? Life Cycle Cost Analysis of the CEL project as reflected in the Transition Plan
  - ? Safety Documentation
  - The above documents have been revised and approved by DOE
2. During Title I, The project should complete the following:
  - ? Project and Construction schedules need to be combined into a hierarchical format, including logic and appropriate milestones
  - ? Schedule to be integrated with program requirements
  - ? Include plans for revisiting the schedule, cost and scope risks on a periodic basis as the project progresses
  - The above actions will be undertaken during Preliminary (Title I) Design
3. DOE should have the indirect rates used by Some National Laboratories audited expeditiously
  - Some Area Office is requesting an audit of the Some National Laboratories indirect rates by the Some Operations Office

DOE has assembled a Corrective Action Plan that documents and will track the actions that are being undertaken to correct identified deficiencies.



APPENDIX C – PSOs RESPONSE PACKAGE

**Corrective Action Plan in Response to the External Independent Review of the Project 00-D-107, Central Engineering Laboratory (CEL) at the Some National Laboratories; June 30, 2000**

Findings and Observations	Corrective Action	Priority	Start Date	End Date	Action Assign	Current Status/Remarks
<u>2.3 Mission Need</u> Finding: CEL will provide the means to develop the tools to support the ASCI and the SSP and to support weapon system manufacturing within Sandia. The mission need was verified by the EIR Team.	Action: Concur	N/A	N/A	N/A	N/A	<u>Complete</u>
<u>2.4 Project Scope</u> Finding: The Life Cycle Cost Analysis (LCCA) conducted for the 1997 CDR found that retrofitting existing buildings for data networking and reorganizing physical space within existing buildings was expensive. Based on the additional complexity of modifying existing buildings to meet Top Secret Restricted Data (TSRD) requirements, the EIR Team concludes that an appropriate alternative was selected by Some National Laboratories (SNL). The directed Project changes do not invalidate the selection of the preferred alternative and they enhance the capability of the Project to support the mission need. Because the LCCA can affect Project design decisions, it is necessary to conduct such analyses even for a selected alternative after selection to assure relevant design decisions have been appropriately evaluated. The Transition Plan for CEL has not undergone such evaluation.	Action: LCCA should be completed for the Transition Plan prior to initiating Title I design.	1	3/14/00	4/28/00	Some Area Office	<u>Complete:</u> LCCA for the project as defined in the Transition Plan has been performed and is located in Section 6.4 of the appendix.
<u>2.5 Technical</u> Findings: ?? The EIR Team concurs that there are no special technical/R&D requirements.	Action: Concur	N/A	N/A	N/A	N/A	<u>Complete</u>

**CORRECTIVE ACTION PLAN (SAMPLE PAGES)**





**OFFICE OF ENGINEERING AND CONSTRUCTION MANAGEMENT  
OFFICE OF PROJECT MANAGEMENT SUPPORT  
INDEPENDENT REVIEW PROCEDURE**

**APPENDIX D - CRITICAL DECISION INFORMATION OUTLINES**



## CRITICAL DECISION 0 - APPROVE MISSION NEED

This attachment provides a general outline for construction scope, cost, schedule, management, and other project related topics that a project requesting CD-0, Approve Mission Need, typically will have investigated prior to the decision. As part of the project development process, field and project team members document results from the investigation of these topics. The depth and breadth of the effort in addressing these project development topics would be scaled, based upon the cost, complexity, and risks of the project. For example, not all projects will be required to follow the formal Safety Analysis Report process, but all projects should perform a hazards analysis. Documents summarizing the investigation results are prepared by the project team and will be circulated for review to the ESAAB/ESAAB Equivalent Board members prior to the board meeting. The site and HQ program representatives will resolve issues and questions posed by the board members, prior to the formal ESAAB/ESAAB Equivalent board meeting. The ESAAB/ESAAB Equivalent Board meeting will serve as the forum for major issues that require the decision of the Acquisition Executive.

### Statement of Mission Need

- define specific need of program
- relate need to DOE and PSO's strategic Plans
- identify how project functions support mission
- mission need date for project
- impact of not meeting mission need date
- impact of Critical Decision 0 delay
- identification and support of mission advocate

### Brief Description

- location (site selection decision required?)
- purpose & function
- features
- long term goals

### Minimum Technical/Functional Requirements

- Technical performance objectives and interfaces
- feasibility of meeting objectives
- R&D required – How funded? R&D plan costs, program support/schedule of deliverables for design
- availability of special systems/equipment
- integration with other project activities
- quality assurance planning
- demonstrate linkage between requirements and mission
- Facility Design Description complete?
- Systems Engineering Planning

### Acquisition Strategy

- acquisition decision process
- acquisition alternatives being considered (i.e. Design-Bid-Build, Design-Build, Lease Back)
- factors for determining decision
- strategy to obtain and use PED funding /incremental funding or other funding profiles
- survey of public and private sector to determine current state-of-the-art project delivery systems and selection of benchmarks of similar projects in DOE and private industry/lessons learned
- make-buy decision process
- define and evaluate feasibility of alternatives of facility/system being proposed

Tri-lab agreement placement/site priority



## Resource Capability

- ID capabilities required
- capabilities of site personnel in these technologies to support project strategy to obtain necessary project capabilities

## Risks

- preliminary risk assessment
- basis for risk assessment
- mitigation strategies

## Preliminary Security Planning

- planned Security Assessments funding
- functional requirements for security defined
- preliminary security determination from review of Site Safeguards & Security Plan
- plan for addressing security in design

## Preliminary Environmental Strategy

- expected NEPA strategy
- pollution prevention issues
- waste minimization issues
- other expected environmental issues
- local outreach strategy

## Preliminary Safety Determination

- define safety objectives and constraints
- ID of major hazards/functional requirements for safety defined
- integrated safety management strategy/process flow diagram

## Proposed Cost and Schedule

- fiscal year funding start
- expected design duration
- expected construction duration
- critical milestones
- cost range for project TEC & TPC
- preliminary funding profile
- mortgage analysis (capital and operating) – does this reasonably fit in PSO's budget out years?
- facility operating costs – can PSO's budget support operating costs?
- preliminary CD1 & CD2 Request dates versus budget cycle milestones

## Preliminary Legal Strategy

- preliminary determination on make-buy decisions
- preliminary review of local agreements
- preliminary NEPA and permitting strategy

## Organizational Interfaces

### Involvement of related agencies

- Strategy for developing internal agency agreements
- State and regulatory agency agreements

- Strategy for cooperation/collaboration with agencies



Conceptual Planning/acquisition  
cost

Congressional notification/approval required (CDR cost > \$3M)  
schedule/duration

budget planning requirements  
who will do CDR  
how will it be acquired/accomplished  
additional R&D and/or planning required prior to CD-1  
option to be developed  
total operating (OPEX) prior to Title I start  
Source of conceptual phase funding.

Project Management (Federal Acquisition Team)

members - organized, charter – roles & responsibilities of each  
program manager - names  
FPM/COTR relationship  
safety  
environmental and health  
legal  
contracts  
public outreach  
maintenance and operations  
contracting officer  
copy of proposed FPM resume and history

Project performance inclusion in M&O performance award?

Identify all assumptions

Identify similar successful and unsuccessful projects on-site and other sites for future benchmarking and lesson learned identification



## CRITICAL DECISION 1 - APPROVE PRELIMINARY BASELINE RANGE

This attachment provides a general outline for construction scope, cost, schedule, management, and other project related topics that a project requesting CD-1, Approve Preliminary Baseline Range, typically will have investigated prior to the decision. As part of the project development process, field and project team members document results from the investigation of these topics. The depth and breadth of the effort in addressing these project development topics would be scaled, based upon the cost, complexity, and risks of the project. For example, not all projects will be required to follow the formal Safety Analysis Report process, but all projects should perform a hazards analysis. Documents summarizing the investigation results are prepared by the project team and will be circulated for review to the ESAAB/ESAAB Equivalent Board members prior to the board meeting. The site and HQ program representatives will resolve issues and questions posed by the board members, prior to the formal ESAAB/ESAAB Equivalent board meeting. The ESAAB/ESAAB Equivalent Board meeting will serve as the forum for large issues that require the decision of the acquisition executive.

### Statement of Mission Need - Validation of currency

- define specific need of program
- relate need to DOE and PSO's strategic Plans
- identify how project functions specifically support mission
- mission need date for project
- impact of not meeting date

### Brief Description

- location (site selection decision approved?)
- purpose & function
- features
- long term goals
- plan to overcome past site project development/execution problems?

### Technical/Functional Requirements

- treatment of technical performance objectives and interfaces in conceptual design
- feasibility of meeting objectives
- R&D funding in place, integrated in project schedules/completed ID deliverables for design
- availability of special systems/equipment
- reliability of systems as relates to facility usability
- integration with other project activities
- preliminary design (Title I) control strategies
- configuration management plan and implementation process
- plan for incorporation of lessons learned from similar projects
- Implementation of Quality Assurance (QA) Plan
- compare to 6% design benchmark used by DOD
- impact of Critical Decision delay
- compare to GSA Administration space guidance

### Acquisition Strategy

- assessment of alternatives - definition and evaluation including life cycle cost
- results of survey to determine current state-of-the-art for project
- results of bench marking of similar projects
- PED funding Execution Plan
- RFQ/RFP/contracting strategy -  
(design-build versus design-bid-build decision analysis vs Construction Management process)



## APPENDIX D - CRITICAL DECISION INFORMATION OUTLINES

### Preliminary Acquisition Plan

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#### Resource Capability

- Assessment of site/Project and Program team personnel capabilities in project specific technologies
- plans to obtain necessary project capabilities

#### Risks

- risk assessment
- basis for risk assessment
- mitigation strategies
- contingency analysis

#### Cost and Schedule

- preliminary TEC & TPC
- detailed cost estimate
- funding profile
- mortgage analysis (capital and operating)
- facility operating costs
- fiscal year funding start
- preliminary project schedule including critical path analysis
- project milestones

#### Project Management

- approved preliminary Project Execution Plan
- project data sheet (CPDS for PED funding to be approved, TEC/TPC Range number)
- assignment of COTR responsibility
- Federal Project Acquisition Team status (part of PEP -changes in personnel that must be approved by AE)
  - program manager
  - FPM
  - safety
  - environmental and health
  - legal
  - contracting officer
  - public outreach
  - maintenance
  - operations

#### Identify past reviews to date

- Is EIR complete or was a favorable internal non-advocate review complete and EIR scheduled?
- Status of correction action plan items.

#### Environmental

- preliminary NEPA assessment/status/issues
- permitting requirements
- pollution prevention plans
- waste minimization plans
- other expected environmental issues
- local outreach input/results
- Energy Conservation Report (ECR) submitted?



Safety

- ID facility processes
- preliminary Hazards Analysis
- hazard categorization
- safety function definitions

- Initial selection of safety class systems
- facility design descriptions
- system design descriptions
- Facility Siting Determination

PSAR DRAFT

CRITERIA FOR DESIGN-IN SAFETY.....

- Hazardous-material Inventory and Characterization
- Preliminary Defense in Depth

Security

- security determination from review of Site Safeguards & Security Plan
- completed security assessments

Legal

- determination on contracting strategy
- local agreements review results
- preliminary NEPA assessment
- permitting requirements

Organizational Interfaces

Involvement of related agencies - schedule integration of stakeholders - DNFSB, NEPA, etc.

- State and regulatory agency agreements
- cooperation/collaboration agreements with agencies
- internal agreements documented and in place.

Report of LL & benchmark from the PT addressed by PT?

Identify all assumptions



## CRITICAL DECISION 2 - APPROVE PERFORMANCE BASELINE

This attachment provides a general outline for construction scope, cost, schedule, management, and other project related topics that a project requesting the new CD-2, Approve Performance Baselines, typically will have investigated prior to the decision. As part of the project development process, field and project team members document results from the investigation of these topics. The depth and breadth of the effort in addressing these project development topics would be scaled, based upon the cost, complexity, and risks of the project. For example, not all projects will be required to follow the formal Safety Analysis Report process, but all projects should perform a hazards analysis. Documents summarizing the investigation results are prepared by the project team and will be circulated for review to the ESAAB/ESAAB Equivalent Board members prior to the board meeting. The site and HQ program representatives will resolve issues and questions posed by the board members, prior to the formal ESAAB/ESAAB Equivalent board meeting. The ESAAB/ESAAB Equivalent Board meeting will serve as the forum for large issues that require the decision of the acquisition executive.

### Statement of Mission Need

- affirm mission need of program
- mission need date for project
- impact of not meeting date
- construction schedule for meeting date

### Brief Description

- location
- purpose & function
- features
- long term goals
- SDDs

### Technical/Functional Requirements

- results of preliminary design (Title I) review
- incorporation of technical performance objectives and interfaces in design
- value engineering results and incorporation of design
- availability of special systems/equipment
- reliability of systems as relates to facility usability
- integration with other project activities
- design control process
- completed design criteria
- confirm lessons learned incorporation
- confirm Quality included in design
- value engineering results
- system design descriptions

### Acquisition Strategy

- Long lead/special equipment procurement strategies/plans/contracts
- RFP/contracting strategy for construction
- updated Acquisition Plan
- RFP approval along with CD-3 request for design build
- Assessment of pre-CD2 performance
- impact of Critical Decision delay

### Risks

- risk assessment - update





## APPENDIX D - CRITICAL DECISION INFORMATION OUTLINES

basis for risk assessment

mitigation strategies - update  
contingency analysis - revised

### Cost and Schedule

performance baseline detailed cost estimate, TEC, & TPC  
updated funding profile & mortgage analysis (capital and operating)  
facility operating costs analysis  
performance baseline project schedule including critical path analysis  
project milestones

### Project Management

approved updated Project Execution Plan  
updated project data sheet  
results of External and Non-advocate reviews  
results of ICE  
Federal Project Acquisition Team (part of PEP)  
confirm in place ID any changes - AE approve changes for key positions  
program manager  
FPM  
safety  
environmental and health  
legal  
contracts  
public outreach  
maintenance  
operations  
EIR#2 complete or favorable Internal Non-Advocate Review complete & EIR#2 scheduled?  
Status of correction action plan items  
Identify past reviews to date

### Environmental

Final NEPA determination  
permitting arrangements  
pollution prevention ideas incorporated into design  
waste minimization ideas incorporated into design  
local outreach input/results  
ID waste sites incorporated in design

### Safety

PSAR chapter 1 - 4  
process hazard analysis  
safety SSC functional requirements  
FDD chapter 1 - 3  
SDD chapter 1 - 3  
criteria for designed in safety  
Defense in depth & worker protection design criteria  
Preliminary Technical Safety requirements.

### Security



#### APPENDIX D - CRITICAL DECISION INFORMATION OUTLINES

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security determination from review of Site Safeguards & Security Plan/Security Assessments  
incorporation of specific security design criteria Security Assessment form

#### Legal

contracting strategy

NEPA determination

permitting arrangements

#### Organizational Interfaces

Involvement of related agencies - revised schedule for stakeholders interface

State and regulatory agency agreements

cooperation/collaboration agreements with agencies

internal MOUs in place

look at CDO/comments

identify all assumptions



### CRITICAL DECISION 3 - APPROVE START OF CONSTRUCTION

This attachment provides a general outline for construction scope, cost, schedule, management, and other project related topics that a project requesting CD-3, Approve Start of Construction, typically will have investigated prior to the decision. As part of the project development process, field and project team members document results from the investigation of these topics. The depth and breadth of the effort in addressing these project development topics would be scaled, based upon the cost, complexity, and risks of the project. For example, not all projects will be required to follow the formal Safety Analysis Report process, but all projects should perform a hazards analysis. Documents summarizing the investigation results are prepared by the project team and will be circulated for review to the ESAAB/ESAAB Equivalent Board members prior to the board meeting. The site and HQ program representatives will resolve issues and questions posed by the board members, prior to the formal ESAAB/ESAAB Equivalent board meeting. The ESAAB/ESAAB Equivalent Board meeting will serve as the forum for large issues that require the decision of the acquisition executive.

#### Statement of Mission Need

- affirm mission need of program
- mission need date for project
- construction schedule for meeting date

#### Brief Description

- location
- purpose & function
- features
- long term goals
- final design plans

#### Technical/Functional Requirements

- results of final design (Title II) review
- incorporation of technical performance objectives and interfaces in design assurance
- assurance of compliance with codes and standards/quality assurance review results
- systems designs as relates to facility reliability/usability
- integration with other project activities
- configuration management process operating
- confirm quality incorporated in design

#### Acquisition Strategy

- long lead/special equipment procurement status
- RFP/contracting strategy for construction - design build combine with CD-2
- final Acquisition Plan
- U.S. vendor participation/completed all foreign ownership determinations
- Assessment of pre-CD#3 performance
- Impact of Critical Decision delay

#### Risks

- updated risk assessment
- mitigation strategies
- contingency status

#### Cost and Schedule

- cost and schedule status of design effort – including earned value analysis
- updated performance baseline detailed cost estimate, TEC, & TPC



## APPENDIX D - CRITICAL DECISION INFORMATION OUTLINES

---

updated funding profile & mortgage analysis (capital and operating)

facility operating costs  
updated performance baseline detailed project schedule (resource-loaded with critical path analysis)  
project milestones  
project control systems in place and operating  
look at CDO/1/2 comments

### Project Management

approved final Project Execution Plan  
updated project data sheet  
project controls, scheduling, configuration management, reporting and change control procedures  
project completion plan approved - transition plan and budget  
out year operating funds included in planning budgets - ops, maint., security  
Federal Project Acquisition Team (part of PEP)  
    program manager  
    FPM  
    safety  
    environmental and health  
    legal  
    contracts  
    public outreach  
    maintenance  
    operations  
status of corrective action plan items  
identify past reviews to date

### Environmental

Final NEPA determination approved  
permitting arrangements complete  
pollution prevention ideas incorporated into design  
waste minimization ideas incorporated into design  
local outreach input/results

### Safety

accident analysis  
SSC performance requirement  
PSAR complete  
FDD complete  
SDDs chapter 1-4  
ES&H integration in project execution  
safety orders and regulations compliance assured  
FSAR Execution Plan - start  
OSHA Safety plan in place  
Completed hazard ID & evaluations  
specifications of preventive and mitigative safety SSCs

### Security

security determination from review of Site Safeguards & Security Plan  
  
incorporation of specific security needs in design  
security escorts for construction (if necessary) funded and available



#### APPENDIX D - CRITICAL DECISION INFORMATION OUTLINES

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coordination of construction activities with security department

##### Legal

contracting strategy

RFP process and contract award may combine with CD-2 for design build  
NEPA determination

permitting arrangements

##### Organizational Interfaces

Involvement of related agencies - results of safety stakeholder reviews - DNFSB other  
State and regulatory agency agreements  
cooperation/collaboration agreements with agencies  
internal agreements status  
identify all assumptions



## CRITICAL DECISION 4 – APPROVE START OF OPERATIONS OR PROJECT CLOSEOUT

This attachment provides a general outline for construction scope, cost, schedule, management, and other project related topics that a project requesting CD-4, Approve Start of Operations or Project Closeout, typically will have investigated prior to the decision. As part of the project development process, field and project team members document results from the investigation of these topics. The depth and breadth of the effort in addressing these project development topics would be scaled, based upon the cost, complexity, and risks of the project. For example, not all projects will be required to follow the formal Safety Analysis Report process, but all projects should perform a hazards analysis. Documents summarizing the investigation results are prepared by the project team and will be circulated for review to the ESAAB/ESAAB Equivalent Board members prior to the board meeting. The site and HQ program representatives will resolve issues and questions posed by the board members, prior to the formal ESAAB/ESAAB Equivalent board meeting. The ESAAB/ESAAB Equivalent Board meeting will serve as the forum for large issues that require the decision of the acquisition executive.

### Statement of Mission Need

- has mission need been met – validation document

### Brief Description

- location
- purpose & function
- features
- long term goals

### Project Management

- staff reduction plan
- project completion plan
- transition plan complete
- operating funds in place
- Federal Project Acquisition Team - plan for continued operation of team or dissolution of team in place.

### Technical/Functional Requirements

- ORR has been completed
- has project validated functional requirements been met?/design criteria were authorized technical performance objectives as stated in the design met?
- was the project fully integrated with the site/systems as proposed?
- operations and maintenance plan is prepared/approved
- facility staff trained in the maintenance and operation of the facility/systems
- facility staffing plans implemented

### Configuration Management

- as-built drawings and documents reflect facility as completed
- configuration management plan is complete and approved
- configuration management documentation integrated into operations/maintenance/safety.

### Acquisition Strategy

- status of construction contracts - closeout
- outstanding claims processed

Risks - contingency status - plan against outstanding project issues



Cost and Schedule

status of funds

expected closeout of project - report

schedule status

documented lessons learned

"as built" complete?

Environmental Status

Have applicable permits, licenses, and regulatory approvals been obtained?

pollution prevention plans or strategies executed as planned

waste minimization efforts completed

have stakeholders concerns been fully addressed?

Have project benefits been fully documented in public participation plans or documents?

Safety

construction changes have been analyzed for effect on safety

safety component specifications are written

SDDs are complete and approved

FDDs updated as needed and approved

FSAR is complete and approved

SER issued

SDDs and FDD link to FSAR

as-builts control safety features

ES&H program plan has been reviewed and revised as necessary

OSHA compliance plan in place for operations

DNFSB interface completed

Security

security requirements as stated in the DOE orders have been met

project integrated into Site Safeguards & Security Plan

security systems physically integrated into site security systems

facility specific security training and procedures are in place

appropriate protective force is in place

Legal

outstanding claims against project identified and plan to resolve addressed

local agreements have been satisfied

NEPA and permitting complete

Demolition and Disposal

D&D plan is complete and approved

agreements/contracts in place for construction/demolition debris disposal

Organizational Interfaces

Involvement of related agencies

compliance with state and regulatory agency agreements

cooperation/collaboration processes/procedures in place with agencies

Evaluate appropriateness of initial assumptions.